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Environmental Impact Report

MOBILITY 2030

The Transportation Plan for the San Diego Region



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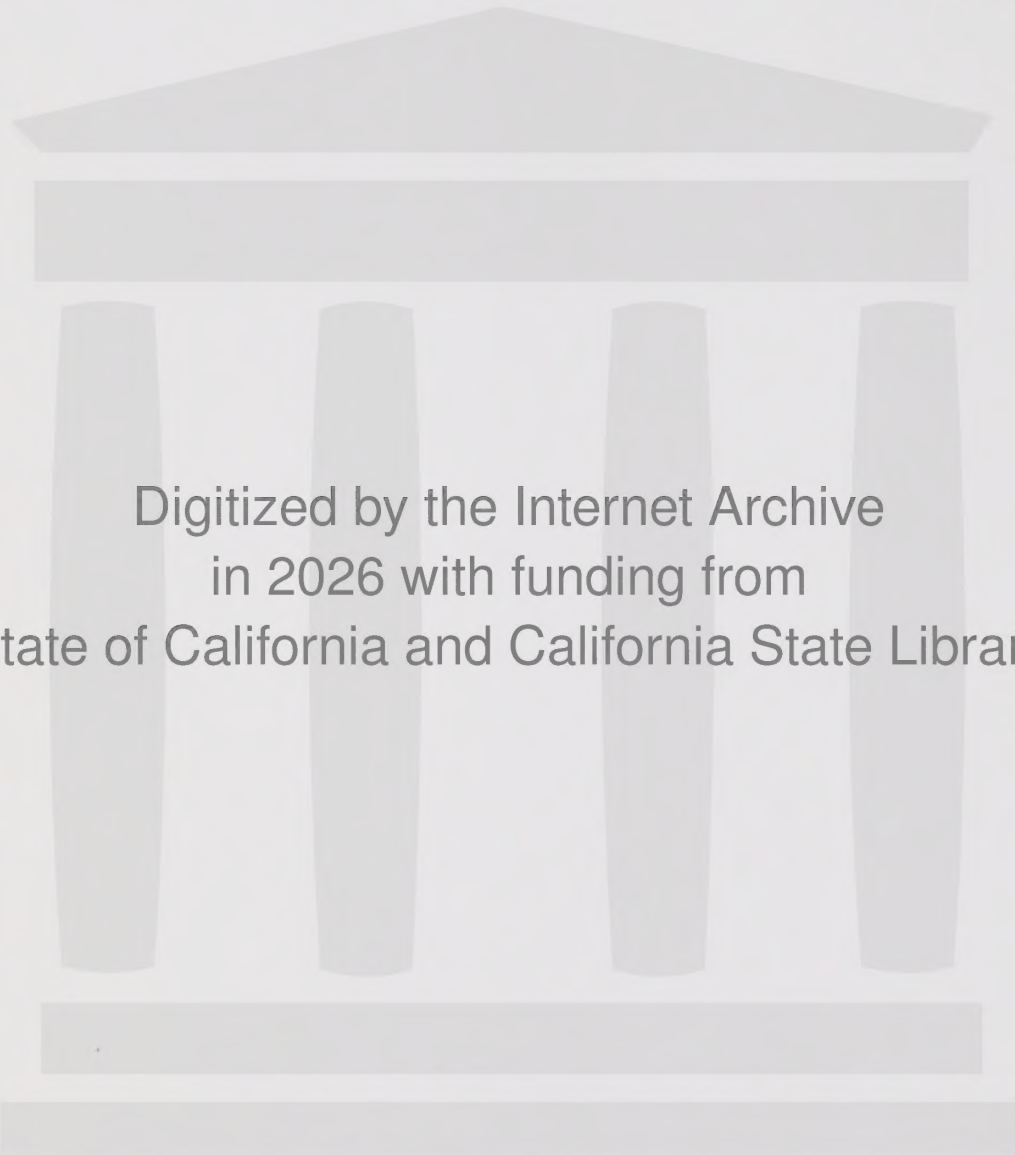


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San Diego's Regional Planning Agency

November 2002

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San Diego's Regional Planning Agency

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November 14, 2002

TO: Interested Agencies, Organizations, and Individuals

FROM: San Diego Association of Governments (SANDAG)

SUBJECT: PUBLIC NOTICE OF AVAILABILITY OF A DRAFT
ENVIRONMENTAL IMPACT REPORT FOR THE 2030 REGIONAL
TRANSPORTATION PLAN, MOBILITY 2030

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SANDAG, as lead agency, has prepared a Draft Environmental Impact Report (EIR) for the 2030 Regional Transportation Plan (RTP), Mobility 2030. The 2030 RTP addresses regional transportation policy for the entire San Diego region which includes the cities of Carlsbad, Chula Vista, Coronado, Del Mar, El Cajon, Encinitas, Escondido, Imperial Beach, La Mesa, Lemon Grove, National City, Oceanside, Poway, San Diego, San Marcos, Santee, Solana Beach, Vista, and the unincorporated areas within the County of San Diego.

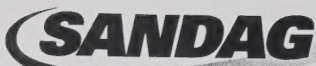
The Draft EIR addresses issues at a program-level and does not identify impacts associated with specific projects. Subsequent individual project actions may result in significant impacts, but would be evaluated on a project-by-project basis.

Written comments regarding the adequacy of this Draft EIR must be received by December 30, 2002. Comments should be addressed or emailed to:

Rob Rundle, Senior Regional Planner
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401 B Street, Suite 800
San Diego, CA 92101
rru@sandag.org

A public hearing for the 2030 Regional Transportation Plan and Environmental Impact Report has been scheduled for December 6, 2002 at 10:15 a.m. at the offices of SANDAG.

RR



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**DRAFT
ENVIRONMENTAL IMPACT REPORT
FOR THE
2030 REGIONAL TRANSPORTATION PLAN**

SCH No. 2002071059

Prepared for:

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November 14, 2002

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LIST OF ACRONYMS AND ABBREVIATIONS

208 Plan	Areawide Water Quality Management Plan
ALUC	Airport Land Use Commission
AMSL	above mean sea level
APCD	Air Pollution Control District
ARB	Air Resources Board
BARCT	best available retrofit control technology
BMP	best management practice
BN&SF	Burlington Northern and Santa Fe
CAA	Clean Air Act
CAAA	Clean Air Act Amendments
CAC	Citizens Advisory Committee on Transportation
CAFÉ	Corporate Average Fuel Economy
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CCAA	California Clean Air Act
CDFG	California Department of Fish and Game
CEQA	California Environmental Quality Act
CLUP	Comprehensive Land Use Plan
CNDDB	California Natural Diversity Data Base
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
dB	decibels
dBA	A-weighted sound pressure levels in decibels
EIR	Environmental Impact Report
EPA	Environmental Protection Agency
ESA	Endangered Species Act
FAR	Federal Aviation Regulation
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FRA	Federal Railroad Administration
FSP	Freeway Service Patrol
FTA	Federal Transportation Administration
HCP	habitat conservation plan

HOT	High Occupancy Toll
HOV	high occupancy vehicle
JURMP	Jurisdictional Urban Runoff Management Plan
L _{dn}	day/night average noise level
L _{eq}	average noise level
LOS	level of service
MHCP	Multiple Habitat Conservation Program
MOA	Memorandum of Agreement
MOU	Memorandum of Understanding
mpg	miles per gallon
mph	miles per hour
MSCP	Multiple Species Conservation Program
MTDB	Metropolitan Transit Development Board
NAAQS	National Ambient Air Quality Standards
NAS	Naval Air Station
NCCP	Natural Community Conservation Plan
NCTD	North County Transit Development
NEPA	National Environmental Policy Act
NFIP	National Flood Insurance Program
NOA	Notice of Availability
NOP	Notice of Preparation
NPDES	National Pollutant Discharge Elimination System
PDA	personal digital assistant
POE	Port of Entry
Procedures	San Diego Transportation Conformity Procedures
RAQS	Regional Air Quality Strategy
RCP	Regional Comprehensive Plan
ROG	reactive organic gases
RPO	Resource Protection Ordinance
RTIP	Regional Transportation Improvement Program
RTP	Regional Transportation Plan
RTV	Regional Transit Vision
RWQCB	Regional Water Quality Control Boards
SANDAG	San Diego Association of Governments
SD&AE	San Diego & Arizona Eastern
SD&IV	San Diego and Imperial Valley Railroad

SDAB	San Diego Air Basin
SDG&E	San Diego Gas & Electric
SDIV	San Diego and Imperial Valley
SDREO	San Diego Regional Energy Office
SIP	State Implementation Plan
STIP	State Transportation Improvement Program
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAZ	traffic area zone
TCM	Transportation Control Measures
TDS	total dissolved solids
TEA-21	Transportation Equity Act for the 21st Century
UBC	Uniform Building Code
USACE	U.S. Army Corps of Engineers
USDOT	U.S. Department of Transportation
USFWS	U.S. Fish and Wildlife Service
VMT	vehicle miles traveled
ZEV	zero-emission vehicles

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EXECUTIVE SUMMARY

S.1 INTRODUCTION/BACKGROUND

This program Environmental Impact Report (EIR) has been prepared pursuant to the California Environmental Quality Act (CEQA) for the 2030 Regional Transportation Plan (RTP) prepared by the San Diego Association of Governments (SANDAG). The Draft 2030 RTP was released by SANDAG in October 2002 and is entitled *Mobility 2030, The Transportation Plan for the San Diego Region* (SANDAG 2002a). The EIR analyzes the potential significant impacts of the adoption of the 2030 RTP by SANDAG. The 2030 RTP is comprised of goals, policies, and objectives, as well as a list of transportation network improvements and other transportation programs that are intended to improve movement of people and goods through the region.

Planning for the proposed 2030 RTP began in mid-2001 and included the collaboration between SANDAG, local jurisdictions, Metropolitan Transit Development Board (MTDB), North County Transit Development (NCTD) Board, and the California Department of Transportation (Caltrans). SANDAG's Board of Directors provided guidance in the development of the 2030 RTP to address various land use and transportation issues. A key consideration in the development of the 2030 RTP was how the plan could alleviate the effects of future growth and traffic congestion through a significant increase in transit ridership and reduced dependency upon the single occupancy vehicle during peak travel periods.

S.2 PURPOSE AND SCOPE OF THE EIR

The 2030 RTP provides the planning foundation for transportation improvements throughout the San Diego region over a nearly 30 year period in the future. The region already supports an existing network of freeways, expressways, regional arterials, transit corridors, regional bus and rail transit corridors, seaport facilities, and ports-of-entry at the United States-Mexico border. These facilities serve the region's 19 local jurisdictions. The proposed 2030 RTP includes plan-level improvements for such elements as new and widened freeways, new transit features, expanded High Occupancy Vehicle (HOV) opportunities, and regional bikeway corridors.

Any transportation improvement project receiving federal or state transportation funds must be included in the 2030 RTP. During future stages in planning and implementation for those

transportation improvements, there will be a separate, project-specific CEQA and/or National Environmental Policy Act (NEPA) evaluation prepared by the project sponsor.

S.3 PROJECT OBJECTIVES

The 2030 RTP represents the transportation policy and action statement of SANDAG to meet the region's long-term mobility needs, to better connect transportation and land use policy decisions, and to create a transportation network that will serve the region through the year 2030. The 2030 RTP is intended to result in a transportation network that can meet the changing socio-economic and technological conditions of the region while preserving, to the extent possible, the environment that helps define a San Diego quality of life. At the core of the 2030 RTP are seven broad policy goals (see below). Of the seven, Mobility is considered the Plan's highest goal.

- **Mobility** Improve the mobility of people and freight
- **Accessibility** Improve accessibility to major employment and other regional activity centers
- **Reliability** Improve the reliability of the transportation system
- **Efficiency** Maximize the efficiency of the existing transportation system
- **Livability** Promote livable communities
- **Sustainability** Minimize effects on the environment
- **Equity** Ensure an equitable distribution of the benefits among various demographic and user groups

S.4 PROPOSED PROJECT

The proposed transportation network included in the 2030 RTP (SANDAG 2002) is the basis of evaluation included in this EIR. The transportation plan was developed around four main components: (1) Land Use-Transportation Connection, (2) Systems Development, (3) Systems Management, and (4) Demand Management. The Land Use component establishes a projected land use distribution pattern that guides the transportation network development. The location of future housing and jobs has a direct influence on regional travel patterns and use of transit. The Systems Development component refers to the definition of a multimodal network to move people to and from their homes, offices, schools, retail stores, and other major activity centers in an efficient manner. The network generally includes three key areas: highways, regional arterials and roadways, and regional/corridor transit services. Systems and Demand Management are the operational components of the Plan. Systems Management provides strategies for getting the most efficiency out of the existing transportation system. Demand Management focuses on reducing trips on the

transportation system during rush hours when most of the traffic congestion occurs. Tables and figures in Chapter 2.0 describes the proposed plan in more detail.

S.5 AFFECTED ENVIRONMENT

The San Diego region includes three general physiographic regions: coastal, montane, and desert. The highest population densities are found in the western third (coastal) of the region where topography and mild coastal climatic conditions have attracted intensive development. Consequently, existing transportation infrastructure is most concentrated and diverse in the populated coastal areas in order to meet the needs of the greatest number of people.

The 2030 RTP provides the planning foundation for transportation improvements that takes into consideration the San Diego region as well as outside the region's boundaries. The area supports an existing network of freeways, expressways, regional arterials, transit corridors, regional bus and rail transit corridors, bikeways, commercial and general aviation facilities, seaport facilities, and ports-of-entry at the United States (U.S.)-Mexico border. These facilities serve the region's 19 local jurisdictions, as well as interregional and international commuting.

S.6 ENVIRONMENTAL IMPACTS AND CUMULATIVE IMPACTS

Table S-1 provides a summary of the environmental consequences resulting from the 2030 RTP. The EIR found that the 2030 RPT would result in significant, potentially unmitigable impacts to Visual and Biological Resources. Other issue areas, including Land Use, Social Environment, Noise, Geology/Paleontology, Water Resources, and Cultural Resources would result in significant but mitigable impacts. Impacts to Traffic/Circulation, Energy, Air Quality, and Environmental Justice would be less than significant.

Cumulative impacts were found to occur in the areas of Land Use, Noise, Water Quality, Biological Resources, and Visual Resources. Though many of the individual impacts could be mitigated to below a level of significance, when considered on a regional level in conjunction with other planned and proposed projects, these impacts would be cumulatively considerable.

Table S-1
Summary of Environmental Impacts, Mitigation Measures, and Residual Impacts

Result of Impact Analysis	Mitigation	Residual Impacts
LAND USE		
Land use patterns along key corridors reflect the presence of existing facilities, so widening would not introduce a new land use type or an incompatible land use pattern.	No mitigation is required.	Less than significant
Where there would be new facilities constructed outside of the currently urbanized core, undisturbed/vacant land could be utilized for transportation purposes. The conversion of vacant land and impacts to agricultural or planned open space resources may be potentially significant in selected areas.	LU-1 For projects in agricultural areas, project implementation agencies shall contact the California Department of Conservation and San Diego's Agricultural Commissioner's office to identify the location of prime farmlands and lands that support crops considered valuable to the local or regional economy. Impacts to such lands shall be evaluated in project-specific environmental documents. The project implementation agencies or local jurisdiction shall be responsible for ensuring adherence to the mitigation measures prior to construction. SANDAG shall be provided with documentation of compliance with mitigation measures. LU-2 Project implementation agencies shall identify open space areas that could be preserved and shall include mitigation measures (such as dedication or payment of in-lieu fees) for the loss of open space.	Less than significant
Smart growth land use planning trends are assumed to be implemented by various jurisdictions and a significant land use impact would not occur.	No mitigation is required.	Less than significant.
SOCIAL ENVIRONMENT		
The 2030 RTP would provide for a more efficient transportation network that allows for better movement of people between major work, housing, and school routes. The enhanced	No mitigation is required.	Less than significant

Table S-1. Continued

Result of Impact Analysis	Mitigation	Residual Impacts
transportation system would be a beneficial socioeconomic impact.		
Certain transportation improvements may potentially displace existing residences or businesses in some areas. Transportation improvements that involve displacement of residents or businesses would represent a significant adverse impact.	Social-1 Significant adverse impacts resulting from displacement of residents or businesses shall be mitigated with applicable federal, state, or local requirements. Such measures include assistance in finding a new location, assistance with moving, or compensation for losses. Where it has been determined that displacement is necessary and displaced individuals are eligible, the relocation assistance program consistent with the State Uniform Location Assistance and Real Properties Acquisition Policies Act provides compensation and assistance in finding new residences for displaced individuals.	Less than significant
VISUAL RESOURCES		
In the short term, construction of projects could result in view blockage. Even with these typical best management practices, short-term visual impacts are often unavoidable; however, these impacts are temporary and would last only throughout the duration of the construction activities. Short-term construction impacts are considered less than significant.	No mitigation is required.	Less than significant
Potentially significant impacts could occur if proposed alignments or facilities require large cut and fill slopes or noise barriers, block views from adjacent areas, or intrude into important vistas along roadways (via noise walls or facilities themselves), and/or change the scale, character and quality of designated or eligible scenic highway corridors. Proposed rail improvements, such as double-tracking in the coastal corridor, could result in significant visual impacts.	Vis-1 Project sponsors shall commit to mitigation measures at the time of the certification of their environmental document. Mitigation measures may include: - Design projects to minimize contrasts in scale and massing between the project and surrounding natural forms and developments. Avoid, if possible, large cuts and fills when the visual environment (natural or urban) would be substantially disrupted. Site or design projects to minimize their intrusion into important viewsheds and use contour grading to better match surrounding terrain. - Use natural landscaping to minimize contrasts between the project	Potentially significant

Table S-1. Continued

Result of Impact Analysis	Mitigation	Residual Impacts
	and surrounding areas. Wherever possible, develop interchanges and transit lines at the grade of the surrounding land to limit view blockage. Contour the edges of major cut and fill slopes to provide a more natural looking finished profile. • Design landscaping along highway corridors to add significant natural elements and visual interest to soften the hard-edged, linear travel experience that would otherwise occur. • Replace and renew landscaping to the greatest extent possible along corridors with road widenings, interchange projects, and related improvements. Plan landscaping in new corridors to respect existing natural and man-made features and to complement the dominant landscaping of surrounding areas. • Construct soundwalls of materials whose color and texture complements the surrounding landscape and development. Use color, texture, and alternating facades to “break up” large facades and provide visual interest. • Where there is room, landscape the soundwalls with plants that screen the soundwall, preferably with either native vegetation or landscaping that complements the dominant landscaping of surrounding areas.	
TRAFFIC/CIRCULATION		
Implementation of the 2030 RTP would result in a less congested roadway system and a more accessible transit system than the No Project condition. At the program level, the 2030 RTP is considered to be beneficial in terms of its impact on the regional transportation system.	No mitigation is required	No Impact
AIR QUALITY		
The 2030 RTP would contribute positively to the purpose of the SIP for the attainment of the RAQS by reducing project congestion. This in turn would have an overall positive impact on regional air quality.	No mitigation is required.	No Impact

Table S-1. Continued

Result of Impact Analysis	Mitigation	Residual Impacts
NOISE		
Planned transit, arterial, highway, and freeway improvements have the potential to significantly impact the local noise environment if sensitive receptors are located nearby. Each individual project would require its own noise study as part of the environmental assessment and review process.	Noi-1 Alignments of transportation corridors shall consider noise sensitive areas and reduce noise levels by maximizing distance to sensitive receptors, use of depressed rights-of-way, berms, or sound barrier walls to reduce noise.	Less than significant
	Noi-2 Land use measures such as zoning designations shall be employed for future development on land adjacent to transportation facilities.	
	Noi-3 Where other methods are impractical, operational constraints shall be imposed to the greatest extent feasible (e.g., limits on vehicle speed, regulation of train horns).	
	Noi-4 Site-specific and project-specific environmental assessment shall be needed for individual transit projects when they are proposed. Noise impacts may be avoided by careful siting of facilities and the use of noise reducing berms, walls, or other barriers.	
ENERGY		
The future increase in population in 2030 with associated travel by vehicles would increase energy consumption. Improved traffic flows (less congestion) and greater transit choices would help to offset this increase in energy consumption; however, there would still be an increase. Fuel consumption with the project is forecast to be 3.5 percent greater than the No Project condition, which is less than the 5 percent significance threshold.	No mitigation is required.	No impact
Proposed transit improvements in the 2030 RTP encourage optimized use of public transportation which provides a more energy-efficient mode of travel and reduces the region’s transportation	No mitigation is required.	No Impact

Table S-1. Continued

Result of Impact Analysis	Mitigation	Residual Impacts
energy consumption.		
GEOLOGY/PALEONTOLOGY		
Due to active faults and geologic formations susceptible to slope failure in the region, new transportation facilities would be exposed to both direct and indirect effects of earthquakes and slope failure. This results in a potentially significant impact.	All projects shall adhere to State of California design standards and all standard design, grading, and construction practices to avoid or reduce geologic hazards. Geo-1 Caltrans has developed engineering design specifications for freeway/highway projects to consider and compensate for site-level geologic and seismic conditions. All site designs shall be reviewed and approved by the appropriate agency, such as FHWA.	Less than significant
The implementation of the 2030 RTP would result in transportation facilities being constructed within geologic formations with moderate to high paleontological resource potential, thus resulting in a potential for paleontological impacts.	Paleo-1 In general, when a transportation construction project involves known fossil-bearing rocks, qualified researchers are stationed on-site to observe during grading and recover scientifically valuable specimens. A certified paleontologist shall be retained by the project implementing agency prior to construction to establish procedures for surveillance and the preconstruction salvage of exposed resources if fossil bearing rocks have the potential to be impacted. The monitor shall provide pre-construction coordination with contractors, oversee original cutting in previously undisturbed areas of sensitive formations, halt or redirect construction activities as appropriate to allow recovery of newly discovered fossil remains, and oversee fossil salvage operations and reporting.	Less than significant
WATER QUALITY		
Erosion resulting from construction would potentially contribute to the sediment load in surface waters. Deposition of sediments downstream may be significant if they are introduced into a potable water supply (reservoirs), flood control channels, or wetlands. The 2030 RTP would result in increased impervious surfaces, resulting in increased runoff, and adding to local non-point source pollution.	All new and improved transportation facilities must comply with federal, state, and local policies, standards, and land use strategies that address water resource issues. In general, compliance with these regulations and permit procedures would be effective in mitigating potential impacts to water resources. <u>Surface Water</u> Water-1 To the extent feasible, drainage of roadway runoff shall be designed to run through grass median strips, contoured to provide adequate	Less than significant

Table S-1. Continued

Result of Impact Analysis	Mitigation	Residual Impacts
Projects constructed in floodplains have a potential for incrementally increasing flood hazards. Other improvements may require fill or alteration of watercourses and lagoons.	storage capacity and to provide overland flow, detention, and infiltration before it reaches culverts. Detention basins and ponds, aside from controlling runoff rates, can also remove particulate pollutants through settling. Water-2 Proper erosion control measures shall be implemented during construction, such as jute netting, straw and chemical mulches, temporary retention ponds, or quick revegetation. Other control measures include limiting the amount of exposed area and preventing construction vehicles and/or equipment from passing through or near natural drainages. Water-3 Long-term sediment control shall include an erosion control and revegetation program designed to allow reestablishment of native vegetation on slopes in undeveloped areas. Water-4 In areas where habitat for fish and other wildlife would be threatened by transportation facility discharge, alternate drainageways shall be sought to protect sensitive fish and wildlife populations. Heavy-duty sweepers, with disposal of collected debris in sanitary landfills, shall be used to effectively reduce annual pollutant loads. Catch basins and storm drains shall be cleaned and maintained on a regular basis. <u>Groundwater</u> Water-5 Detention basins, infiltration strips, and other features to facilitate groundwater recharge shall be incorporated into the design of new freeway and roadway facilities whenever possible. Water-6 Projects shall be designed so that they do not increase downstream flooding risks by substantially increasing peak runoff volumes. This could be achieved by increasing the size of local flood control facilities serving the project areas, or by including detention ponds in designs for roadway medians, parking areas, or other facilities. Water-7 Projects shall be designed to allow lateral transmission of stormwater	

Table S-1. Continued

Result of Impact Analysis	Mitigation	Residual Impacts
	flows across transportation corridors with no increased risk of upstream flooding. Culverts and bridges shall be designed to adequately carry drainage waters through project sites. The bottom of overpass structures shall be elevated at least 1 foot above the 100-year flood elevation at all stream and drainage channel crossings.	
	Water-8 All roadbeds for new highway and rail transit facilities shall be elevated at least 1 foot above the 100-year base flood elevation.	
BIOLOGICAL RESOURCES		
Major roadways may present an impediment to the movement of wildlife across the region and habitat fragmentation can substantially impact long-term viability of wildlife populations in the region.	Bio-1 Design projects to minimize or eliminate impacts to natural habitats and known sensitive species. Large contiguous areas of habitat shall be avoided to reduce fragmentation of remaining habitat areas. Bio-2 Provide for continued movement of ground-level wildlife across rights-of-way, where there are designated wildlife corridors through the use of appropriately sized bridges or other openings where roads or transit features would create barriers.	Less than significant
Construction of new, or widening of existing roadways, may directly impact native habitat and wildlife, including sensitive plant and wildlife species and wetlands. Adverse indirect effects to wildlife may also result from ongoing noise, light glare, air pollution, and polluted runoff after the facilities are built.	Bio-3 Provide off-site mitigation contiguous with areas of like resources to maximize the biological value of the habitat provided as mitigation. These efforts shall be coordinated with resource agencies and regional habitat conservation and planning efforts such as the MSCP and the MHCP. Bio-4 Where possible, avoid impacting oak woodlands, vernal pools, estuaries, lagoons and other regionally and locally significant biotic resources; where unavoidable, replace with equal or better quality habitat to ensure no net loss of the resource. Bio-5 Where possible, avoid alteration of streambeds and associated riparian vegetation; where unavoidable, replace with like quality or better habitat at a ratio required by regulatory agencies with the goal of no net loss to wetlands. Bio-6 Preserve open space areas identified in local, state, and federal plans.	Less than significant

Table S-1. Continued

Result of Impact Analysis	Mitigation	Residual Impacts
	Bio-7 Remove only as much vegetation and disturb only as much wildlife habitat as is absolutely necessary for grading. Revegetate with native plants where appropriate. Bio-8 Schedule construction to avoid or minimize impacts to wildlife (e.g., avoid breeding season for sensitive species). Bio-9 Use appropriate water pollution control technology and best management practices to minimize or eliminate impacts to downstream aquatic systems.	
Implementation of the double-tracking initiative and I-5 improvements along the coastal corridor would result in impacts to the lagoon systems throughout San Diego County as well as certain coastal bluff locations. These are highly sensitive locations which support sensitive habitat and species. Until the specific biological impacts are quantified and feasible mitigation is identified, this impact would remain significant.	See Bio-3; Bio-4; Bio-5.	Potentially Significant and unmitigable
CULTURAL RESOURCES		
Major new transportation projects, may impact significant prehistoric or historic properties. Intensification of land uses along established transit corridors in older portions of the cities where structures of architectural or historical significance are located could result in historic impacts.	Implementation of the 2030 RTP would be required to comply with federal, state, and local regulations and procedures for the protection and evaluation of archaeological, historic, and heritage properties. Background inventories along corridors would be used to identify the kinds of resources that may be encountered within the corridor. For federal or state projects, a Memorandum of Understanding/Memorandum of Agreement (MOU/MOA) would be entered into with the State Office of Historic Preservation. Any testing or data recovery would be undertaken after preparation of a research design that would outline relevant goals and procedures to be followed. Involvement of Native Americans or others who may have a heritage interest in the resources would be included in the resource investigations or evaluations.	Less than significant

Table S-1. Continued

Result of Impact Analysis	Mitigation	Residual Impacts
	Cult-1 Where feasible, the project shall implement design measures to avoid archaeological or historical resource areas or areas identified as having significant heritage values to living peoples.	
	Cult-2 Preservation of important cultural or scientific sites by capping with fill, asphalt, or some other material to preserve their contextual setting shall be considered.	
	Cult-3 Areas of cultural or scientific resources shall be monitored during the grading phase.	
	Cult-4 Archaeological and historical resources shall be salvaged through data sample recovery programs.	
	Cult-5 All specimens collected shall be archived at an appropriate institution.	

S.7 OTHER CEQA CONSIDERATIONS

This section of the EIR addresses other topics required by CEQA.

Environmental Justice

Based on the Environmental Justice analysis provided in Section 6.1, the 2030 RTP would provide an equitable level of service for both minority and low income populations. No disproportionate adverse impacts related to equity of service from the 2030 RTP would occur to the minority and low income communities identified for the San Diego region.

Significant Environmental Effects Which Cannot Be Avoided If the Proposed Project Is Implemented

Mitigation measures included in this EIR and measures outlined in individual project-specific environmental analysis could mitigate many impacts to below a level of significance. However, significant impacts in the area of Visual and Biological Resources probably could not be mitigated to below a level of significance. These impacts could be significant, unavoidable, and potentially unmitigable at this plan level.

Significant Irreversible Environmental Changes Which Would Be Caused by the Proposed Project Should it Be Implemented

Implementation of the 2030 RTP would result in permanent changes to the existing environment that have been recognized in other sections of this EIR. The conversion of undeveloped and agricultural land to urbanized uses is considered a permanent change. The conversions would occur directly through construction of new facilities on undeveloped land, and indirectly through development of surrounding lands which could not have occurred without construction of new transportation facilities. Construction of new projects in undeveloped areas would create increased human activity, traffic, and noise.

Biological habitat fragmentation could occur with the construction of linear transportation facilities including both highway and fixed rail alignments. Adverse effects to wildlife from noise, light, and glare associated with traffic on a new roadway or transit alignment could occur. These changes would be irreversible.

The 2030 RTP is based on smart growth land use policies which focus future growth near existing urban areas. This consolidated land use pattern would result in densification along high volume and potential transit corridors and stations. This identification of higher density could change community character and create a demand for the development of new infrastructure, services, schools, parks, and other community facilities in the affected areas.

Besides the commitment of land to urban uses, implementation of projects recommended in the 2030 RTP would involve the consumption of energy derived from nonrenewable sources, such as fossil and nuclear fuels. Building materials could be considered permanently consumed, although these might be recyclable in part at some future date.

Growth Inducing Impact of the 2030 RTP

Overall, the 2030 RTP is designed to serve the planned growth for the region through a smart growth land use scenario. However, as discussed in Section 6.4, some of the land use policies and new transportation facilities recommended in the 2030 RTP could be defined as growth inducing. Smart growth policies encourage higher density residential uses, employment centers, and mixed-use development adjacent to transit centers and transit corridors. The 2030 RTP also encourages the construction of new transit centers. Siting the highest density uses near transit facilities would encourage more efficient use of mass transit and could reduce some vehicle miles traveled, reducing energy consumption and air pollutant emissions. The impacts would be localized and the Plan is not anticipated to increase growth regionwide; rather, it would affect distribution of projected growth. Therefore, the growth-inducing impacts of these policies would be primarily beneficial. More intense growth could create land use impacts if the new higher intensity development is not designed to be compatible with surrounding existing development.

Limited development in outlying areas of the urbanized part of the region could result in longer commute lengths and increased vehicle miles traveled. This could have an adverse impact on air quality and energy consumption. However, these new highway segments would also relieve congestion on existing roads, which would reduce energy consumption and emissions of air pollutants on those facilities.

Policies in the 2030 RTP would encourage transit- and pedestrian-friendly development throughout the region. Managed/HOV lanes throughout the region promote and encourage ridesharing. Locations along the new southern segment of SR 125 from Otay Mesa to SR 54 have been identified

for potential transit stations. Provision of mass transit in these corridors would make it easier for people in new developments to use alternative modes of transit.

The 2030 RTP focuses on transportation policies given an assumed level of growth that will occur with or without implementation of its policies and actions. These policies work towards reducing the impact of growth on the region and providing beneficial improvements to regional transportation geared towards smart growth development patterns.

Effects Not Found to Be Significant

Implementation of the 2030 RTP would not create significant impacts in the issue areas of Transportation/Circulation, Energy, and Air Quality. Additionally, the Environmental Justice analysis did not identify any disproportionate adverse impacts relating to equity of service for low income and minority populations.

S.8 ALTERNATIVES SUMMARY AND ENVIRONMENTALLY SUPERIOR ALTERNATIVE

Chapter 7.0 of this EIR considers five alternatives to the proposed 2030 RTP. These include (1) No Project, (2) Transit Emphasis Alternative, (3) Highway Emphasis Alternative (Smart Growth), (4) Highway Emphasis Alternative (Current Plans) and the (5) Revenue Constrained Alternative. The No Project Alternative is required by CEQA. The other alternatives have been generated by SANDAG in the RTP process as alternate means of achieving the goals and objectives of the 2030 RTP. The overall goal is to meet the region's long-term mobility needs by better connecting transportation and land use policy decisions, thereby creating an appropriate transportation network while preserving, to the extent possible, the San Diego environment and quality of life. As noted in Section 2.3, SANDAG has identified seven goals for the 2030 RTP. The number one goal is Mobility; that is, moving people and goods, not just vehicles, while also better managing congestion.

The alternatives were derived to reflect distinct differences with respect to investment, mobility, and environmental effects and provide SANDAG decision-makers with a range of choices regarding the future transportation system of the San Diego region. The respective alternatives are described in Chapter 7.0, which identifies the key transportation network characteristics of the alternatives and a detailed comparison of the various roadways, freeway and transit improvements associated with each of the alternatives is shown in Appendix C of the EIR. The five alternatives are described briefly below.

The No Project Alternative, required by CEQA, addresses the potential effects of developing only the baseline network of transportation projects (highway, transit, local roadway, bicycle and pedestrian) that are considered committed projects. These projects are identified in the Fiscal Year 2002 Regional Transportation Improvement Program (RTIP) or have otherwise committed funding. The baseline network would involve some improvements, but there would be fewer new roads and those that would be widened would have fewer lanes than under other alternatives. This alternative assumes a future land use scenario consistent with smart growth.

Under the Transit Emphasis Alternative, funds would be spent primarily on transit capital expenses, a large part on transit operating expenses, and the remainder on transit projects in the highway system (e.g., managed lanes). Extensive transit systems would cover the central urban core, link the major freeways, and extend eastward on I-8 and SR 67. This system would be based in part on trolley and fixed-rail, improvements, but would rely heavily on expansion and improvement of the regional and corridor bus system. The future land use pattern is based on implementing smart growth policies.

The Highway Emphasis Alternative (Smart Growth) would focus funds on construction of highways, while maintaining transit-dedicated funds consistent with state and federal directives. The Highway Emphasis Alternative would result in completion of several freeway connectors, and maximize general purpose freeway lanes with limited highway managed lanes. Transit would focus only on key corridors north-south (I-5, I-15) and east-west (I-8, SR 78). Under this scenario, the land use pattern would reflect smart growth consistent with the 2030 RTP.

Under the Highway Emphasis Alternative (Current Plans), the transportation network would be almost identical to the Highway Emphasis Alternative (Smart Growth), but the land use pattern would be different. The land use pattern difference would result in variations in performance measurements, particularly with regards to proximity to transit opportunities and employment/school, because the future growth would spread over a larger area and be less focused on mixing residential/employment/educational uses.

The Revenue Constrained Alternative derives a transportation network given only known funding sources and assumes flexible funding sources such as *TransNet* would not be available. Given the reduced funds, fewer capital projects would be completed by 2030. This alternative would have a greater emphasis on carpool opportunities than the Highway Emphasis Alternative, but less emphasis on transit than the Transit Emphasis Alternative. The land use pattern for this alternative is assumed to be smart growth.

Alternatives Comparison

SANDAG may adopt any of the alternatives included in this EIR. Although federal planning regulations require that SANDAG identify a set of projects that can be delivered based on reasonably available funding (Revenue Constrained Alternative), these requirements do not preclude SANDAG from adopting a plan that includes additional projects. Possible new revenue sources may be available such as voter approval of an extension of Proposition A which authorized *TransNet* funds.

Table S-2 illustrates some of the different characteristics of each alternative in terms of indicators linked to the seven goals for the 2030 RTP. For comparison, the same indicators are provided for existing (year 2000) conditions and the proposed project plus all of the alternatives.

Environmentally Superior Alternative

As noted, the CEQA Guidelines require each EIR to identify the environmentally superior alternative, and if the No Project alternative is so identified, then another alternative must be selected. Table S-3 compares the effects of the alternatives to the proposed 2030 RTP. This gross-scale ranking helps to make apparent the relative differences between alternatives, as well as similarities to the proposed project.

Generally, the two Highway Emphasis Alternatives would have greater environmental impacts than the project or other three alternatives. The Transit Emphasis Alternative would be considered the Environmentally Superior Alternative of the five considered because it would have comparatively less new construction, yet it would do a better job of achieving the goals of moving people and goods than the No Project Alternative.

As noted, the most important goal of the seven identified for the 2030 RTP is to improve mobility by better moving people and goods, and reducing congestion. As compared to the proposed project, the Transit Emphasis Alternative would likely have incrementally fewer impacts to land based resources because more of the focus would be placed on improving transit instead of building or expanding roads. Some road improvements would still be implemented but the new U.S.-Mexico port of entry and SR 11 would not. The proposed project is designed to handle increased numbers of automobiles, trucks, carpools, buses, trains, as well as other transit. It would get people to and from their destinations more quickly, allow them to spend less travel time in congested (LOS E or F) conditions, and better facilitate international goods movement. The proposed project would, therefore, best achieve the mobility goals for the 2030 RTP.

Table S-2
Key Indicators of Proposed Project and Alternatives

Indicators	Existing (2000)	Proposed 2030 RTP	No Project	Transit Emphasis	Highway Emphasis (Smart Growth)	Highway Emphasis (Current Plans)	Revenue Constrained
Mobility							
Average daily travel time/trip (minutes)	14.4	15.1	15.1	15.3	14.7	15.7	14.9
Average work trip daily travel time (minutes)	24.1	25.4	26.0	31.7	24.4	26.1	25.1
Work trip average speed (peak period) in auto (m.p.h.)	28.6	28.0	24.6	26.2	29.2	28.4	27.1
Work trip average travel speed (peak period) in transit (m.p.h.)	10.1	12.7	10.6	13.3	12.0	12.3	11.6
Accessibility							
Percent of work and higher education trips accessible in 30 minutes (peak periods)	70%	67%	64%	64%	70%	65%	67%
Reliability							
Percent of daily VMT at LOS E or F (peak periods)	25%	22%	30%	24%	18%	24%	24%
Percent of daily VMT at LOS E or F (all day)	13%	12%	20%	15%	10%	13%	15%
Efficiency							
Total 30-year public and private travel costs per trip	\$1.77	\$1.70	\$1.86	\$1.80	\$2.04	\$1.90	\$1.81
Equity							
Average daily travel time							
- Low income population	n/a ⁽¹⁾	15.7	15.6	15.9	15.2	15.7	15.4
- Non low income population	n/a ⁽¹⁾	15.0	15.1	15.3	14.7	15.7	14.8

Table S-2. Continued

Indicators	Existing (2000)	Proposed 2030 RTP	No Project	Transit Emphasis	Highway Emphasis (Smart Growth)	Highway Emphasis (Current Plans)	Revenue Constrained
- Minority population	n/a ⁽¹⁾	14.6	14.6	14.9	14.2	14.6	14.3
- Non minority population	n/a ⁽¹⁾	15.4	15.4	15.6	15.1	16.4	15.2
Livability							
Percent of homes within 2 mile of a transit stop	63%	62%	60%	62%	61%	61%	61%
Sustainability							
Total daily on-road fuel consumption (in millions)	3.9	5.9	5.8	5.7	6.1	6.5	5.9
Smog forming pollutants (tons/day)	244.6	43.5	43.7	42.7	44.4	46.3	43.8
Constrained land used for transit/highway (in acres) ⁽²⁾	N/A	129	46	51	437	437	127

⁽¹⁾ Breakdown for low income and minority populations are based on projections and traffic area zones (TAZ) for 2030 which are not comparable to 2000 TAZ.

⁽²⁾ Constrained land defined as areas with steep slopes >25 percent, open space lands including MSCP and proposed MHCP, 100-year floodway, wetlands, CNEL >65 in residential areas.
VMT = vehicle miles traveled

Table S-3
Comparison of Alternatives to the Proposed Project

Issue Area	No Project	Transit Emphasis	Highway Emphasis (Smart Growth)	Highway Emphasis (Current Plans)	Revenue Constrained
<u>Land Use</u>					
- Loss of Constrained Land	1	1	5	5	3
- Consistent with smart growth planning efforts	5	3	3	5	3
Population & Housing	4	3	3	4	3
Visual	2	2	4	5	2
<u>Traffic</u>					
- Congestion	5	4	2	3	4
- Travel Time	3	4	2	4	2
Air Quality	3	2	4	5	3
Noise	2	2	4	5	2
Energy	3	2	4	5	3
Geology	2	2	4	5	2
Water Resources	2	2	4	5	3
Biological Impacts	1	2	4	5	3
Cultural Resources	1	2	4	5	3

1 - Much more favorable, 2 - More favorable, 3 - Comparable, 4 - Less favorable, 5 - Much less favorable

CHAPTER 1.0

INTRODUCTION AND STUDY APPROACH

1.1 PURPOSE OF THE EIR

This program Environmental Impact Report (EIR) has been prepared pursuant to the California Environmental Quality Act (CEQA) for the 2030 Regional Transportation Plan (RTP) by the San Diego Association of Governments (SANDAG). The Draft 2030 RTP was released by SANDAG in October 2002 and is entitled *Mobility 2030, The Transportation Plan for the San Diego Region* (SANDAG 2002a). The EIR analyzes the potential significant impacts of the adoption of the 2030 RTP by SANDAG. The 2030 RTP is comprised of goals, policies, and objectives, as well as a list of transportation network improvements and other transportation programs that are intended to improve efficient movement of people and goods through the region.

SANDAG, as the transportation planning and programming agency for the San Diego region, builds consensus, makes strategic plans, obtains and allocates resources, and provides information on a broad range of topics pertinent to the region's quality of life. As a regional council of governments, representation consists of the County of San Diego and the 18 cities in the region that are voting members of the association. SANDAG advisory members include the California Department of Transportation (Caltrans), the Metropolitan Transit Development Board (MTDB), the North County Transit Development (NCTD) Board, U.S. Department of Defense, San Diego Unified Port District, and the San Diego County Water Authority. Tijuana, Baja California, Mexico, is a liaison member of the association.

In federally designated air quality nonattainment and maintenance areas, the U.S. Department of Transportation — Federal Highway Administration (FHWA) and Federal Transit Administration (FTA) — require that the region submit a long-range transportation plan every 3 years to ensure that proposed transportation improvements do not adversely affect regional air quality attainment goals. The RTP must span a period of at least 20 years into the future. The planning horizon of the 2030 RTP will be to the year 2030. The last comprehensive EIR for the 2020 RTP was completed by SANDAG in 2000. A new EIR for the 2030 RTP is necessary to adequately evaluate potentially significant environmental effects of the plan and to indicate the manner in which such significant effects can be avoided or mitigated.

The 2030 RTP is a long-range plan designed to coordinate and manage future regional transportation improvements, services, and programs among the various agencies operating within the region. Any transportation improvement project receiving federal or state transportation funds must be included in the RTP. At future stages in planning and implementation for those transportation improvements, there will be a separate, project-specific CEQA and/or National Environmental Policy Act (NEPA) evaluation prepared by the project sponsor. The specific transportation improvements included in the proposed 2030 RTP are described in Chapter 2.0 of this EIR.

This environmental assessment of the 2030 RTP fulfills the requirements of CEQA and is designed to inform decision-makers, responsible and trustee agencies, and the general public of the proposed project, in this case the Plan itself, and the range of potential environmental impacts of the associated activities. The EIR recommends a set of measures to mitigate any significant adverse regional impacts identified in the analysis of the 2030 RTP. The final EIR will include a Mitigation Monitoring and Reporting Program that identifies who will be responsible for implementing the measures. This EIR also analyzes alternatives to the proposed project. The EIR process provides an opportunity to identify transportation, economic, and social benefits of the 2030 RTP that might balance some adverse environmental impacts. As the lead agency for preparing this EIR, SANDAG will use these beneficial findings in its review of, and prior to, adopting the 2030 RTP.

This EIR represents the best effort to evaluate the 2030 RTP given its long-term planning horizon. It can be anticipated that conditions will change; however, the assumptions used are the best available at the time of preparation and reflect existing knowledge of patterns of development, travel patterns, modes of travel, and technological factors. As previously stated, the RTP is periodically updated and will continue to rely on the best information that is available at the time of any future updates.

1.2 SCOPE OF THE EIR

The 2030 RTP EIR is a program EIR, as defined in the CEQA Guidelines. Section 15168 of the CEQA Guidelines defines a program EIR as “an EIR which may be prepared on a series of actions that can be characterized as one large project and are related either: (1) geographically; (2) a[s] logical parts in the chain of contemplated actions; (3) in connection with the issuance of rules, regulations, plans, or other general criteria to govern the conduct of a continuing program; or (4) as individual activities carried out under the same authorizing statutory or regulatory authority and having generally similar environmental impacts which can be mitigated in similar ways.”

Program EIRs can be used as the basic, general environmental assessment for an overall program of projects developed over the 27-year planning horizon. A program EIR has several advantages. First, it provides a basic reference document to avoid unnecessary repetition of facts or analysis. Second, it allows the lead agency to look at the broad, regional impacts of a program of actions before its adoption and eliminates redundant or contradictory approaches to the consideration of regional and cumulative impacts.

As a programmatic document, this EIR presents a regionwide assessment of the potential impacts of the 2030 RTP. Because it is a planning document intended to guide actions 30 years into the future, the level of evaluation in the EIR is program-level and qualitative. There is not enough specific information available to provide detailed, quantitative analysis.

The EIR is organized into a total of nine chapters of which seven key chapters are described below. The remaining two chapters (Chapters 8.0 and 9.0) include the list of preparers, references, and persons contacted during preparation of the EIR. Supporting technical appendices (Appendices A, B, and C) are also included.

Executive Summary. This section summarizes the purpose and need for the proposed 2030 RTP and provides a review of the potentially significant adverse regional environmental impacts of the 2030 RTP as well as the measures recommended to mitigate those impacts. The summary also notes whether those measures mitigate the significant impacts to below a level of significance. Finally, the executive summary describes the alternatives and their merits compared to the various transportation network scenarios and associated future land use plans.

Chapter 1.0: Introduction and Study Approach. This chapter describes the relationship between the proposed 2030 RTP and the EIR and describes the basic legal requirements of a program level EIR. It describes the scoping process and includes a summary of comments received during the Notice of Preparation (NOP) review period.

Chapter 2.0: Project Description. This chapter introduces the purpose and objectives of the 2030 RTP, defines the context for the 2030 RTP, and provides specific information about the 2030 RTP planning document. The Plan itself is the project evaluated in this program EIR. For purposes of the impact analysis it is evaluated against the No Project build-out scenario. The Plan includes a recommended mobility transportation network of highways, transit facilities, arterial roads, high occupancy vehicle (HOV)/managed lanes, a regional bikeway system, and other transportation

programs and strategies, as well as policies, goals, and objectives for regional transportation in the San Diego region.

Chapter 3.0: Environmental Setting. This section includes a brief overview of the physical characteristics of the San Diego region and identifies rare or unique environmental resources, and other CEQA required disclosures.

Chapter 4.0: Environmental Analysis. Chapter 4.0 describes the existing environmental setting for each of the issue areas analyzed in the EIR, the potential impacts that the proposed 2030 RTP would have on these areas, and measures to mitigate the potential impacts identified. These environmental issues include:

- Land Use
- Social Environment
- Visual Resources
- Transportation/Circulation
- Air Quality
- Noise
- Energy
- Geology/Paleontology
- Water Resources
- Biological Resources
- Cultural Resources

For each of the environmental issue areas, the analysis includes the following: (1) Existing Conditions, (2) Significance Criteria, (3) Impact Analysis, (4) Significance of Impacts, (5) Mitigation Measures, and (6) Residual Impacts. The mitigation measures will be incorporated into a Mitigation, Monitoring, and Reporting Program to be adopted by SANDAG as conditions of approval for the project.

Chapter 5.0: Cumulative Impacts. As required by CEQA, a cumulative impact analysis is provided to evaluate the potential impacts resulting from the incremental impact of the proposed 2030 RTP when added to other closely related past, present, and reasonably foreseeable projects.

Chapter 6.0: Other Required Sections. This chapter identifies the significant unavoidable environmental changes, significant irreversible impacts, growth-inducing impacts, effects not found to be significant, and mandatory findings of significance as warranted by the environmental analysis.

This chapter also includes an environmental justice component conforming to the intent of Chapter 762, (California) Statutes of 2001, and Executive Order 12898 (Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations). A quantitative

analysis is provided to evaluate how the 2030 RTP meets its objective to provide equitable levels of transportation services for minority and low income populations.

Chapter 7.0: Alternatives. This chapter evaluates and compares five alternatives to the proposed 2030 RTP. As required by CEQA, one alternative is the No Project alternative. The others are transportation network variations with emphasis on key modes (e.g., highways or transit). In addition, one network variation is evaluated with two land use scenarios; adopted plans and policies versus smart growth. All are compared for their potential to achieve the objectives of the 2030 RTP while reducing potentially significant adverse regional environmental impacts. The baseline network of transportation projects assumed under the No Project alternative is described in detail in this chapter.

1.3 NOTICE OF PREPARATION

CEQA regulations require an early and open process for determining the scope of issues that should be addressed prior to implementation of a proposed action. SANDAG initiated the scoping process on July 12, 2002. The NOP was received by the State Clearinghouse (Clearinghouse) at the California Office of Planning and Research on July 12, 2002. The Clearinghouse is responsible for monitoring compliance of state agencies in providing timely responses. The Clearinghouse assigned state identification number SCH No. 2002071059 to this EIR.

The NOP provides formal notification to all federal, state, and local agencies involved with funding or approval of the project, and to other interested organizations and members of the public, that an EIR will be prepared for the project. The NOP is intended to encourage interagency communication concerning the proposed action and provide sufficient background information about the proposed action so that agencies, organizations, and individuals can respond with specific comments and questions on the scope and content of the EIR. A copy of the NOP is provided in Appendix A, as well as all the written responses received during the 30-day NOP period.

1.4 PUBLIC SCOPING

Consistent with AB 1532, which modified Section 21083.9 of the CEQA statutes, a public scoping meeting was held on July 23, 2002, to solicit comments on the EIR. The meeting was held at SANDAG during the monthly 2030 RTP Working Group meeting. Attendees included representatives from the working group and members of the public. SANDAG transcribed minutes from the meeting, which are included in Appendix A.

Issues raised during the public comment period relating to CEQA issues and the scope of the EIR are summarized in Table 1-1. The section of this EIR where comments are addressed is also noted in this table. The issues are derived from written comments received during the NOP period as well as those from the scoping meeting. It should be noted that many comments received during the NOP period were, in fact, comments on the RTP document, the RTP planning process, and other topics typically outside the purview of a CEQA analysis, e.g., funding sources and funding allocation. These types of comments are not included in Table 1-1, although all comments have been reviewed and incorporated as applicable into the RTP by SANDAG staff.

Table 1-1
Summary of NOP Public Comments

Issue Area	Section Where Addressed in EIR
Definition of Proposed Projects	
The EIR should be written in a clear and concise manner that will be understood by the general public.	Throughout the body of the EIR.
Address whether the Regional Transit Vision alternatives are addressed in the EIR.	Section 4.1, Land Use
Define the term “mode.”	Chapter 2.0, Project Description
The EIR should identify why it is preferable, or more economical, to build out along the transit corridors in a more dense pattern of development.	Section 4.1, Land Use Chapter 7.0, Alternatives
Transportation and Traffic	
The EIR should define the Regional Arterial System at the same level of detail as the transit and highway systems.	Chapter 2.0, Project Description Chapter 7.0, Alternatives
Future fuel consumption should be addressed relative to the planned transportation network.	Section 4.4, Transportation Section 4.7, Energy
The EIR should thoroughly analyze the traffic impacts to at-grade crossings near the existing San Diego Trolley light rail stations on E Street, H Street, and Palomar Street in Chula Vista and how ramp operations will be affected.	Section 1.2, Introduction, and Chapter 4.0, Environmental Analysis
Address how the benefits of the transit alternative include less parking construction because more people are using transit versus vehicles.	Section 7.1, Alternatives
Air Quality	
The EIR needs a comparison of air emissions from various alternatives taking into consideration recent legislation, vehicle miles traveled, and transit emissions.	Chapter 7.0, Alternatives

Table 1-1. Continued

Issue Area	Section Where Addressed in EIR
Land Use	
The EIR should discuss the land use buildout assumptions used in the 2030 RTP and consistency with current and ongoing land use planning efforts. Describe which general plan updates are included in the 2030 RTP (City of San Diego, City of Chula Vista, County of San Diego) and whether the project is consistent with these plans.	Section 4.1, Land Use
The EIR should describe the land use impact for each transportation network alternative, for both the smart growth and current plans buildout scenarios.	Chapter 7.0, Alternatives
Describe how smart growth assumptions affect land use in comparison with sprawl-type of development. Define the term smart growth.	Chapter 2.0, Project Description Section 4.1, Land Use
Social Environment	
Describe how the EIR incorporates the County's land use assumptions and describe the difference between the 2020 and 2030 growth projects. Also describe how the EIR addresses the number of housing units that could be accommodated by 2030 under the County's General Plan, the County Targets/Proposed land use plan, and SANDAG's assumptions from 2020 to 2030.	Section 4.1, Land Use Section 4.2, Social Environment
Biological Resources	
The EIR should include a comprehensive discussion of both direct and indirect biological impacts relating to cumulative and growth inducement issues.	Section 4.10, Biological Resources Chapter 5.0, Cumulative Impacts Chapter 6.0, Other Considerations Required by CEQA
Quantify acreage and habitat impacts through quantitative and qualitative analysis. Address state and federally listed species. The EIR should also include a discussion regarding fragmentation impacts to aquatic and terrestrial wildlife and plants and address the light and noise impacts to sensitive resources. The analysis should also discuss water quality/runoff impacts to adjacent sensitive habitats, riparian and wetland communities.	Section 4.10, Biological Resources Appendix B
Appropriate mitigation should be included in the Biology discussion to protect habitat values, including methods to prevent soil erosion and siltation of habitats.	Section 4.10, Biological Resources Section 4.9, Water Resources
Cultural Resources	
As required by the State Historic Preservation Officer, transportation projects would be required to follow these measures; - contact the appropriate Information Center for a records search - contact the Native American Heritage Commission for a Sacred Land file check and a list of appropriate Native American contacts for consultation and - include in the mitigation plan provisions for identification and evaluation of accidentally discovered archaeological resources	Section 4.11, Cultural Resources

Table 1-1. Continued

Issue Area	Section Where Addressed in EIR
Hazardous Materials	
Address methods to be employed to prevent discharge of hazardous material/wastes along new transportation routes, especially during construction.	Section 4.9, Water Quality
Alternative Analysis	
The Alternatives analysis should include a purpose and need statement, rationale explaining the pros and cons for each alternative, project list assumed under each alternative, and a comparative matrix for the performance measures.	Chapter 7.0, Alternatives Appendix C
The EIR should address an alternative that reduces/avoids impacts to sensitive habitats and wildlife. The alternatives should also address carpool, smart growth, and mobility emphasis scenarios.	Chapter 7.0, Alternatives
Cumulative Impacts	
Growth inducement and cumulative impacts should be analyzed in the EIR.	Chapter 5.0, Cumulative Impacts
Identify potential impacts to areawide resource management plans. The discussion should evaluate and quantify all actions that may affect the same resources potentially affected by a proposed project.	Chapter 5.0, Cumulative Impacts
Public Involvement	
Describe the notification process for the Draft and Final EIR, including any public outreach efforts.	Chapter 1.0, Introduction

1.5 AREAS OF KNOWN CONTROVERSY

Members of the public have expressed concern regarding whether the smart growth land use assumption in the 2030 RTP is valid regionwide. Public controversy also exists on whether the proposed 2030 RTP will provide viable choices to move single-occupancy drivers from their cars to become new transit riders.

1.6 CONSULTATION AND COORDINATION

The lead agency for this proposed action is SANDAG. Responsible agencies involved in the 2030 RTP process include Caltrans, NCTD Board, MTDB, and local jurisdictions. Coordinating agencies include:

- California Air Resources Board
- FHWA
- FTA
- San Diego Air Pollution Control District

To help improve planning for transit options in the region, SANDAG established the Citizens Advisory Committee on Transportation (CAC). The CAC included over 70 people from various groups representing community, environmental, business, educational, and governmental organizations. The CAC acted in an advisory role to SANDAG's Transportation Committee to help incorporate a larger regional role for public transit in a planned update to the 2020 RTP. Eventually, a decision was made to prepare a 2030 RTP instead of updating the 2020 version. Toward that end, SANDAG formed a smaller Working Group specifically for the 2030 RTP. The Working Group has provided input to the 2030 RTP on regional transportation issues, including land use distribution and transportation network alternatives, regional performance measures, transportation evaluation criteria, and transportation investment strategies.

A comprehensive public outreach program was developed for the 2030 RTP. One of the key goals of the public outreach program was to inform a broad-based audience who may never have heard of SANDAG or the 2030 RTP, and to raise the public's awareness of the transportation planning process. Part of this outreach program included a media campaign called "Keep San Diego Moving," which raised public awareness about the 2030 RTP through the use of radio, television, newspaper, and advertising. Public information materials were developed including brochures, a website, an on-line and printed survey, and a toll-free comment line. SANDAG also reached various audiences with a transportation "Road Show" at local community events across the region.

The Draft EIR is made available for a 45 day public review as required by CEQA. It was released on November 14, 2002 at the regularly scheduled meeting of the SANDAG Transportation Committee. A Notice of Availability (NOA) for the EIR has been published in local newspapers, mailed to an extensive distribution list, and the EIR is posted on SANDAG's website. EIRs have been distributed to the State Clearinghouse, commentors on the NOP, SANDAG's Transportation Committee, the SANDAG Board, city managers of all 19 jurisdictions, and public libraries throughout the region. A public hearing on the 2030 RTP and the EIR will be held on December 6, 2002 at SANDAG's regularly scheduled Policy Board meeting. The Final EIR will be considered for certification at a Board of Director's meeting in early 2003, along with the adoption of the 2030 RTP.

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CHAPTER 2.0

PROJECT DESCRIPTION

This chapter provides a description of the proposed project evaluated in Chapter 4.0 of this EIR. The project background is summarized, then the purpose and objectives are described, followed by a description of project characteristics and a summary of project approvals that would be required.

2.1 PROJECT BACKGROUND

Planning for the proposed 2030 RTP began in mid-2001 and included the collaboration between SANDAG, local jurisdictions, MTDB, NCTD, and Caltrans. SANDAG's Board of Directors provided guidance in the development of the 2030 RTP to address various land use and transportation issues. A key consideration in the development of the 2030 RTP was how the plan could alleviate the effects of future growth and traffic congestion through a significant increase in transit ridership.

To create consensus and address the concerns raised during preparation of the previous RTP, SANDAG used a bottom-up collaborative planning process. The 2030 RTP Working Group was specifically created to help develop the 2030 RTP. The 2030 RTP Working Group met on a monthly basis during a 1-year span. Various issues were discussed such as land use distribution and transportation network alternatives, regional performance measures, transportation evaluation criteria, and RTP financial scenarios.

SANDAG staff worked closely with the Board of Directors and other stakeholders to develop a set of viable transportation alternatives capable of meeting mandatory air quality goals and mobility objectives for the San Diego region. In developing these transportation alternatives, staff considered a variety of factors, including system performance, financial feasibility, and land use development patterns and trends. Using SANDAG's transportation model and performance measures based on the RTP's major goals — Mobility, Accessibility, Reliability, Equity, Livability, Sustainability, and Efficiency — SANDAG developed the proposed 2030 RTP.

2.2 PURPOSE OF THE 2030 RTP

The 2030 RTP provides the planning foundation for transportation improvements throughout the San Diego region over nearly 30 year period in the future. The region already supports an existing network of freeways, expressways, regional arterials, transit corridors, regional bus and rail transit corridors, seaport facilities, and ports-of-entry at the United States-Mexico border. These facilities serve the region's 19 local jurisdictions. Figure 2-1 illustrates the San Diego region and key transportation features. The proposed 2030 RTP includes plan-level improvements for such elements as new and widened freeways, new transit features, expanded HOV opportunities, and regional bikeway corridors. The 2030 RTP reflects the implementation of existing trends for the San Diego region in terms of modified land use patterns and a greatly improved transit system.

2.3 PROJECT OBJECTIVES

The 2030 RTP represents the transportation policy and action statement of SANDAG to meet the region's long-term mobility needs, to better connect transportation and land use policy decisions, and to create a transportation network that will serve the region through the year 2030. The 2030 RTP is intended to design a transportation network that can meet the changing socioeconomic and technological conditions of the region while preserving, to the extent possible, the environment that helps define a San Diego quality of life. At the core of the 2030 RTP are seven broad policy goals (see below). Of the seven, mobility is considered the Plan's highest goal.

- **Mobility** Improve the mobility of people and freight
- **Accessibility** Improve accessibility to major employment and other regional activity centers
- **Reliability** Improve the reliability of the transportation system
- **Efficiency** Maximize the efficiency of the existing transportation system
- **Livability** Promote livable communities
- **Sustainability** Minimize effects on the environment
- **Equity** Ensure an equitable distribution of the benefits among various demographic and user groups

The need for the 2030 RTP arises from population and employment growth in the region, and the need to implement a network that can provide easy access to work, school, and other daily activities. The 2030 RTP is based on growth forecasts for the region in 2030. Since the recession ended in the mid-1990s, population growth in the region has averaged approximately 50,000 persons per year. SANDAG's 2030 Regional Growth Forecast projects that between 2000 and 2030, the region will

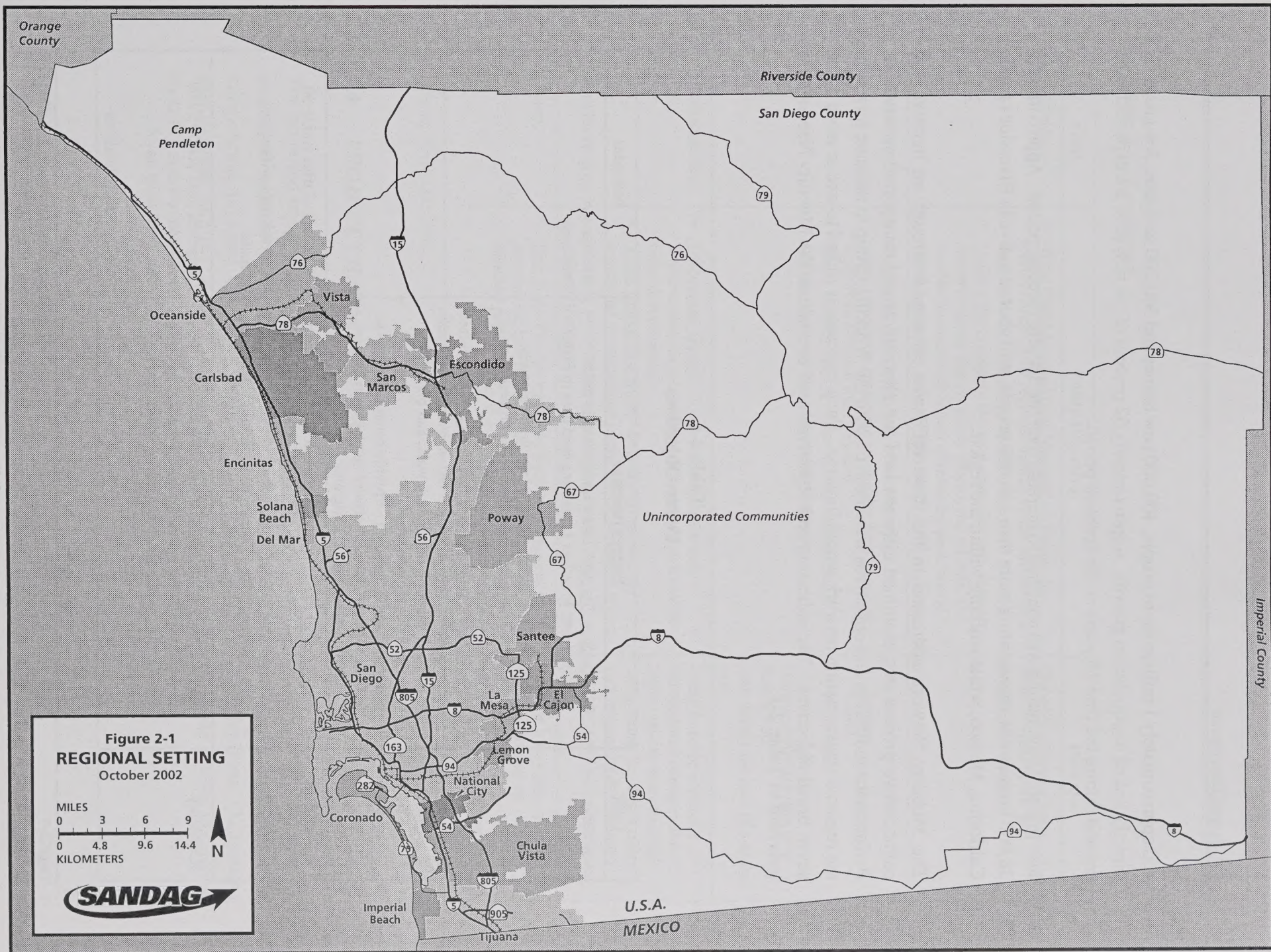


Figure 2-1
REGIONAL SETTING
 October 2002

MILES
 0 3 6 9
 0 4.8 9.6 14.4
 KILOMETERS

N



add approximately 1 million more people, 400,000 new homes and 500,000 new jobs. Job growth is directly linked to population growth. Approximately 62 percent of the new jobs are expected to be created during the first 15 years of the forecast period.

Interregional commuting will continue to increase over the 30-year forecast period. Approximately 38,000 households, representing more than 100,000 people, will choose to live in Riverside or Baja California, Mexico, while working within the region.

The Mobility Network addressed in the 2030 RTP was developed through an iterative and collaborative process that examined different land use alternatives and transportation networks. Performance indicators and objectives were derived with the Working Group to measure how well the regional transportation network would function. Each indicator is linked to one or more of the seven broad objectives. The indicators and objectives used to evaluate the Mobility Network are provided in Table 2-1.

**Table 2-1
Policy Objectives**

Goal	Policy Objective	Indicator
Mobility	• <u>No One Size Fits All</u> - Tailor transportation modal improvements to reflect supporting land uses in major travel corridors. • <u>The Most Bang for the Buck</u> - Make the Regionally Significant Transportation Network the highest priority for regional transportation funding. • <u>Move People and Goods, Not Just Vehicles</u> - Minimize drive alone travel by making it fast, convenient, and safe to carpool, vanpool, ride transit, walk, and bike and improve goods movement. • <u>Better Manage Congestion</u> - Provide better responses to traffic congestion through greater emphasis on the Congestion Management Program.	Average work trip travel time (minutes)
Accessibility	• <u>Boost Transit Ridership</u> - Achieve a double-digit transit mode share during peak periods, with competitive transit travel times to major job centers. • <u>Let's Walk and Bike</u> - Encourage walkability and better bicycle access within our local communities.	Work/School trips within 30 minutes Nonwork trips within 15 minutes
Reliability	• <u>Inform Travelers</u> - Apply new technologies and management strategies to make travel services more reliable and convenient and to reduce nonrecurrent congestion.	Congested peak period travel conditions Congested daily travel conditions Daily accidents/fatalities

Table 2-1. Continued

Goal	Policy Objective	Indicator
Efficiency	• <u>What Gets Measured Gets Managed</u> - Measure the performance of the regional transportation system on a regular basis and manage its efficiency. • <u>Relieve the Pressure</u> - Develop cost-effective, voluntary incentive programs for major employers, schools, and residential areas with a goal of reducing peak period travel demand by at least 5 percent by 2030.	Out-of-pocket user costs Total 30-year public and private travel costs
Livability	• <u>Put Transit Where It Works</u> - Focus transit improvements in areas with compatible land uses that support an efficient transit system. • <u>Smart Growth Carrots</u> - Use regional transportation funding as an incentive for smarter land uses.	Work trip mode split - carpool - transit - bike/walk Homes within 1/2 mile of a transit stop Jobs within 1/4 mile of a transit stop
Sustainability	• <u>Discourage Sprawl</u> - Focus roadway and transit improvements in urban/suburban areas, away from the region's rural areas. • <u>Think Before You Build</u> - Evaluate all reasonable noncapital transportation improvement strategies before pursuing major expansions to roadway or fixed guideway capacity.	Smog forming pollutants On-road fuel consumption Daily vehicle miles traveled Daily transit passenger miles Constrained lands consumed for transportation infrastructure
Equity	• <u>Play Fair</u> - Provide equitable levels of transportation services for low-income, minority, and elderly and disabled persons.	Average travel time (minutes) - Low income vs. Non-low income - Minority population vs. Non-minority population

Source: SANDAG 2002a

2.4 PROJECT CHARACTERISTICS

The proposed transportation network included in the 2030 RTP (SANDAG 2002) is the basis of evaluation included in this EIR. The transportation network was developed around four main components: (1) Land Use-Transportation Connection, (2) Systems Development, (3) Systems Management, and (4) Demand Management. Each component has a unique role in improving mobility and travel in the San Diego region through the year 2030.

The Land Use component establishes a projected land use distribution pattern that guides the transportation network development. The location of future housing and jobs has a direct influence on regional travel patterns and use of transit. The Systems Development component refers to the definition of a multimodal¹ network to move people to and from their homes, offices, schools, retail stores, and other major activity centers in a cohesive manner. The network generally includes three key areas: highways, arterial roadways, and regional transit services. Systems and Demand Management are the operational components of the Plan. Systems Management provides strategies for getting the most efficiency out of the existing transportation system. Demand Management focuses on reducing trips on the transportation system during rush hours when most of the traffic congestion occurs. The following discussion highlights the projects, programs, and strategies included in the 2030 RTP that address each of the four components.

It should be noted that the 2030 RTP reflects transportation improvements that are already approved via other local, state, and federal processes. Accordingly, there are roadway and transit improvements that can, and will, be constructed without adoption of the 2030 RTP. These improvements reflect the No Project condition for the year 2030, which is not the same as the existing condition in year 2002. Refer to Section 7.1 and Appendix C for a description of the network improvements under the No Project scenario.

Land Use and Transportation Connection

The 2030 RTP is based on a smart growth land use distribution scenario. SANDAG defines smart growth as a compact, efficient, and environmentally sensitive pattern of development that provides people with additional travel, housing, and employment choices by focusing future growth away from rural areas and closer to existing and planned job centers and public facilities. Smart growth land use strategies are encompassed in SANDAG's REGION2020 plan. The 2030 RTP includes an incentive of \$25 million seed money for a 5-year pilot program to encourage smart growth within the region. The smart growth land use distribution scenario includes the proposed general plan updates currently being developed by the cities of San Diego and Chula Vista and the County of San Diego. The County has developed future population targets for the unincorporated communities, along with land use configurations, that attempt to support the population, while reducing urban sprawl. Generally, the concept is to focus population into "county towns" such as the community of Ramona, while minimizing sprawled suburban development in the outlying rural areas. The City of San

¹ Mode refers to one of various forms of transportation, including automobile, transit, bicycle, and walking.

Diego's Strategic Framework Element and City of Villages concept envisions a network of mixed-used urban nodes connected by a greatly enhanced transit system. The City of Chula Vista is currently updating its plan and has identified several potential smart growth areas that are consistent with existing and planned transit services. On a regionwide basis, a smart growth land use distribution pattern results in fewer interregional trips; shorter commute trips; and greater accessibility to, and use of, transit.

Systems Development

The 2030 RTP provides a blueprint to improve the regional transportation system. The existing regional network consists of 601 miles of highways (including only 18 miles of HOV lanes), 84 miles of regional transit service, and more than 686 miles of regional arterials. The 2030 RTP envisions 637 miles of highways with 189 miles of HOV lines, 361 miles of regional transit service and more than 734 miles of regional arterials. Figure 2-2 depicts the 2030 RTP of regional transportation improvements (refer to end of Chapter 2.0).

The San Diego region has seen a gradual decline in commuting by carpool and transit and an increase of people driving alone. Between 1990 and 2000, the percent of residents who drove alone to work increased, while commuting by all other modes decreased or stayed the same. Currently, the region's transportation system accommodates over 11 million daily trips. Travel demand is projected to increase to 16 million daily trips by 2030. The RTP includes incentives for encouraging alternative commuter travel choices such as the use of transit. The proposed network infrastructure improvements in transit, highways, and arterial roads are described in more detail below.

Transit Improvements

The proposed transit improvement programs included in the 2030 RTP are shown in Table 2-2 and Figure 2-3 (see Figures at end of Chapter 2.0). The goal of the enhanced transit program is to provide an attractive alternative to the use of a single occupant automobile and to provide needed transportation to people who do not own or operate a car. The proposed plan includes new routes that would operate at higher speeds of an average 40 miles per hour on freeways and 25 miles per hour on arterials in the year 2030. Spacing stations farther apart than current transit services achieves these higher transit speeds. New stations would be integrated into central activity areas that include pedestrian and bicycle-friendly components. The proposed transit services include the use of a new type of transit vehicle known as flex trolleys or "trains on tires." This type of low-floor

vehicle has the flexibility of buses and operates as a rail. It also allows for the use of smart fare cards to allow for easier and speedier boarding.

**Table 2-2
Proposed Transit Improvements¹**

Transit Facilities	Proposed Improvements	Adjacent Jurisdiction
Mission Valley East Trolley Extension	Mission Valley East Extension is an extension of the San Diego Trolley light rail system from its current terminus in Mission Valley at Mission San Diego 5.9 miles to Grossmont Center. Stations include an underground station at San Diego State University. Opening is planned for 2005.	San Diego
Oceanside to Escondido Rail	Oceanside to Escondido Rail project is a 24-mile light rail line serving the Highway 78 corridor. Planned to open in 2005, this service will be a single-track system with 15 stations including Oceanside and Escondido Transit Centers, Palomar College, and Cal State San Marcos. The 2030 RTP calls for double-tracking that line, increased service frequencies, and an extension from the Escondido Transit Center to North County Fair.	Oceanside Vista San Marcos Escondido
Sorrento Mesa Transitway	Sorrento Mesa Transitway is a grade-separated transit-only facility in the Sorrento Mesa/University City area of San Diego.	San Diego
Kearny Mesa Transitway	Kearny Mesa Transitway is a grade-separated transit-only facility along the I-15 corridor in Kearny Mesa.	San Diego
Mid-Coast Light Rail	Mid-Coast Light Rail is an extension of the San Diego Trolley from the Old Town Transit Center, along I-5 to University City and along the Sorrento Mesa Transitway.	San Diego
Coastal Rail Double-Tracking	Coastal Rail double-tracking includes a number of double-tracking and related projects along the coastal rail line between Oceanside and downtown San Diego. These include siding projects, bridge replacements, safety improvements, and passenger enhancements planned to benefit	Oceanside Carlsbad Encinitas Solana Beach Del Mar San Diego

Table 2-2. Continued

Transit Facilities	Proposed Improvements	Adjacent Jurisdiction
	the rail services using the coastal rail corridor (i.e., Coaster, Amtrak, potential High-Speed Rail, and freight).	
Coastal Rail Tunnels at University City and Del Mar	Coastal Rail Tunnels at University City and Del Mar would provide better reliability, safety, and travel time savings to the rail services using the coastal rail corridor.	Del Mar San Diego
Other Regional Rail Grade Separations	Other Regional Rail Grade Separations include a number of grade separations along the current Blue Line Trolley, between San Ysidro and downtown San Diego, and the Oceanside to Escondido Rail line. Exact locations are to be determined at a later date.	Chula Vista San Diego Oceanside Escondido Vista San Marcos
Improved/New Major Transit Stations and Centers	Improved/New Major Transit Stations and Centers are either improvements to existing or the construction of new transit centers. These include design features like shelters, landscaping, and integration with the local community, advanced systems like real-time information, and pedestrian-friendly features. Additional parking is provided at a number of these stations.	All Jurisdictions except for Imperial Beach Del Mar Poway
Direct Access Ramps to Managed/ HOV Lanes	Direct access ramps to Managed/HOV lanes provide a direct connection for transit from the HOV or managed lanes on the freeway to the transit center.	San Diego Chula Vista National City Santee Encinitas Escondido
Vehicles for New Regional Transit Services	Rail vehicles for new regional transit services could include a variety of different vehicles such as light and commuter rail vehicles, articulated bus, standard bus, or flex trolleys.	Systemwide
Arterial Transit Priority Improvements	These improvements enable transit to bypass traffic-choked areas on major arterials. They can include signal priority, grade-separated intersections, or queue jumper lanes. Exact locations along a given route would be determined at a later date.	Systemwide

¹ Refer to Section 7.1 and Appendix C for the transit projects above that would also be constructed under the No Project.
Source: SANDAG 2002a

Highway Network

Operation and maintenance of the region's highway and arterial network is an important component of the 2030 RTP. Major categories of the proposed improvements for highways and arterials include Managed/HOV Lane facilities, direct HOV to HOV connections, Highway System Completion, Highway and Arterial Widenings, and new Freeway to Freeway Connections. Figures 2-4 and 2-5 (at the end of Chapter 2.0) identify the 2030 highway and corridor improvements. Tables 2-3 and 2-4 list the proposed regional highway and arterial network improvements. The highway and regional arterial improvements included in the 2030 RTP are integrated and coordinated to support, and complement, the expanded transit system. This includes the Managed/HOV Lane facilities, some of which support the regional network of 18 new regional transit services.²

The 2030 RTP also includes improvements to the region's bike networks as shown in Table 2-5. Figure 2-6 (end of Chapter 2.0) illustrates the regional bikeway corridors proposed in the 2030 RTP.

Systems Management

Strategies for better management and more efficient operation of the existing networks are part of the Systems Management component. These include programs and projects such as the Freeway Service Patrol (FSP) and High Occupancy Toll (HOT) lanes. The patrol service eases traffic congestion by removing disabled vehicles from the roadway in a reasonably short time period. The HOT program allows single drivers to gain access to HOV lanes (otherwise limited to carpools) by paying a fee. The lanes are managed through variable pricing to maintain free flow conditions, especially during rush hours.

The 2030 RTP supports ongoing transportation management programs such as the Regional Intermodal Transportation Management Systems Network that interconnects all of the region's local transportation management centers. The network includes tools that provide for:

²An HOV (High Occupancy Vehicle) lane refers to an exclusive road or traffic lane limited to HOVs that typically have a higher operating speed and lower traffic volumes than a general purpose or mixed flow lane. In California, vehicles that typically can use HOV lanes include carpools, vanpools, buses, other multipassenger vehicles, and motorcycles and emergency vehicles.

Table 2-3
2030 RTP Mobility Network Major Freeway/Highway Capital Projects¹

Freeway	From	To	Action
Freeways/Highways Not Yet Constructed (some approved)			
SR 11	SR 905	Mexico	4 New Freeway Lanes
SR 52	SR 125	SR 67	4 New Freeway Lanes
SR 56	Camino Ruiz	Carmel Country	4 New Freeway Lanes
SR 125	SR 905	San Miguel Rd.	4 New Lanes (Toll Road)
SR 125	San Miguel Rd.	SR 54	4 New Freeway Lanes
SR 125	Navajo Rd.	Grossmont	6 New Freeway Lanes
SR 125	Jamacha Rd.	SR 94	6 New Freeway Lanes
SR 905	I-805	Mexico	4 New Freeway Lanes
Widened Freeways/Highways			
I-5	SR 15	I-8	2 Additional Freeway Lanes, Total 10 Lanes
I-5	I-805 Merge	---	4 Additional Freeway Lanes, Total 14 Lanes
I-8	2nd Street	Los Coches	2 Additional Freeway Lanes, Total 6 Lanes
I-15	I-5	SR 94	2 Additional Freeway Lanes, Total 8 Lanes
SR 52	I-5	I-805	2 Additional Freeway Lanes, Total 6 Lanes
SR 67	Mapleview St.	Dye Road	2 Additional Highway Lanes, Total 4 Highway Lanes
SR 75/SR 282 ⁵	Glorietta Blvd.	Alameda Blvd.	2 New Lanes in a Tunnel, Existing 6 Highway Lanes on Top of Tunnel
SR 76	Melrose Dr.	I-15	2 Additional Highway Lanes, Total 4 Highway Lanes
SR 78	I-5	I-15	2 Additional Freeway Lanes, Total 8 Lanes
SR 94	SR 125	Avocado Rd.	2 Additional Freeway Lanes, Total 6 Lanes ²

Table 2-3. Continued

Freeway	From	To	Action
SR 94	Avocado Rd.	Steel Canyon Rd.	2 Additional Highway Lanes, Total 4 Lanes ²
SR 905	I-5	Heritage Rd.	2 Additional Freeway Lanes, Total 6 Lanes
New Managed/HOV Lanes³			
I-5	SR 905	SR 54	2 Additional HOV Lanes, Total 10 Lanes
I-5	SR 54	SR 15	2 Additional HOV/ Freeway Lanes, Total 10 Lanes
I-5	I-8	I-805	2 Additional HOV Lanes, 2 Additional Freeway Lanes, Total 12 Lanes
I-5	Del Mar Heights	Leucadia Blvd.	2 Additional Freeway Lanes, 4 Additional Managed Lanes, ⁴ Total varies from 14 to 12 Lanes
I-5	Leucadia Blvd.	Vandergrift Blvd.	4 Additional Managed Lanes, ⁴ Total 12 Lanes
I-5	Vandergrift Blvd.	Orange County	2 Additional HOV Lanes, Total 10 Lanes
I-8	SR 125	SR 67	2 Additional HOV Lanes, Total 10 Lanes
I-8	SR 67	2nd Street	2 Additional HOV Lanes, Total 8 Lanes
I-15	SR 94	SR 163	2 Additional Freeway Lanes, 2 Additional HOV Lanes, Total 10 Lanes
I-15	SR 163	SR 78	4 Additional Managed Lanes/ Movable Barriers, Total 12 Lanes
I-15	SR 78	Center City Pkwy.	2 Additional HOV Lanes, Total 10 Lanes
I-15	Centre City Pkwy.	Riverside County	2 Freeway Lanes Converted to Freeway Lanes, Total 8 Lanes
SR 52	I-805	SR 15	2 Additional Freeway Lanes, 2 Additional HOV Lanes, Total 8 Lanes

Table 2-3. Continued

Freeway	From	To	Action
SR 52	I-15	SR 125	2 Additional Freeway Lanes, 2 Additional Reversible Managed Lanes, Total 8 Lanes
SR 54/125	I-5	SR 94	2 Additional Freeway Lanes, 2 Additional HOV Lanes, Total 8 Lanes
SR 56	I-5	I-15	2 Additional Freeway Lanes, 2 Additional HOV Lanes, Total 8 Lanes
SR 94/SR 125	I-5	I-8	2 to 4 Additional Freeway Lanes, 2 Additional HOV Lanes, Total 10 Lanes
SR 241	Orange County	I-5	4 Additional New Lanes (Toll Road), 2 Additional HOV Lanes, Total 6 Lanes
I-805	SR 905	SR 54	4 Additional Managed Lanes/Movable Barriers, Total 12 Lanes
I-805	SR 54	I-8	4 Additional Managed Lanes, Total 12 Lanes
I-805	I-8	I-5	4 Additional Managed Lanes, Total 12 Lanes
I-805	Mission Valley Viaduct		
I-805	I-8	I-5	4 Additional Managed Lanes/Movable Barriers, Total 12 Lanes
HOV to HOV Connections			
Freeway	Intersecting Freeway	Movement	
I-5	I-805	I-5 to I-5 - Sorrento Valley	
I-15	SR 78	East to South & North to West	
I-15	I-805	North to North & South to South	
I-15	SR 94	South to West & East to North	
SR 125	I-8	West to South & North to East	
I-805	SR 52	West to North & South to East	
Complete Freeway Connections			
I-5	I-8	East to North & South to West	

Table 2-3. Continued

Freeway	From	To	Action
I-5	SR 56	West to North & South to East	
I-5	SR 78	West to North & South to East	
SR 94	SR 125	West to North & South to East	

- ¹ Refer to Section 7.1 and Appendix C for the highway improvements that would be constructed under No Project.
- ² Improvements also include upgrading conventional Highway Lanes to Freeway Lanes. (Highway is a general term usually referring to a state or federally designated urban or rural route, designed to accommodate longer trips in the region. Freeways refer to a multilane divided roadway, grade separated from other roadways, with full control access and egress.)
- ³ Managed Lanes: HOV & Value Pricing.
- ⁴ Managed Lanes refers to freeway lanes on which the number of vehicles using the facility can be limited, and/or where the direction of the lanes can be changed.
- ⁵ Assumes special funding from outside sources.

Table 2-4
Proposed Highway/Managed Lane Improvements
Generally by Corridor

Roadway Corridor	Proposed Improvement	Jurisdiction
I-5 from San Ysidro to Sorrento Valley	I-5 from San Ysidro to Sorrento Valley serves the urban core of the San Diego region. Widening is planned from its current 8 lanes by an additional 2 HOV lanes, from SR 905 to I-8, and by an additional 2 mixed flow and 2 HOV lanes from I-8 to Sorrento Valley. This stretch of I-5 will need to follow the recommendations of the Central I-5 Corridor Study to improve access to the Port, Downtown and various local interchanges and freeways. Freeway to freeway connectors are planned for the I-5/I-8 interchange.	San Diego Chula Vista National City U.S. Navy
I-5 from Sorrento Valley/Carmel Valley Area north to SR 78	The I-5/I-805 "Merge" project in Sorrento Valley is currently under construction. The "Merge" project will widen I-5 from the existing 8-lane configuration by adding 2 HOV lanes and 6-lane outer separation for trucks and traffic destined for SR 56. Completion is expected by 2004. The I-5 HOV Corridor Study recommends adding 6 HOV/Mixed Flow lanes on I-5, from I-805 to Leucadia Boulevard, and 4 lanes on to Vandergrift Road in Oceanside. Coordination is taking place with rail studies	San Diego Solana Beach Encinitas Carlsbad Oceanside

Table 2-4. Continued

Roadway Corridor	Proposed Improvement	Jurisdiction
	to ensure consistency in long-range planning between rail and freeway elements. Other operational improvements, such as interchange reconstruction and auxiliary lanes, are scheduled to begin construction in 2003. Direct freeway to freeway connectors are planned along the I-5 corridor at the interchanges of both SR 56 and SR 78.	
I-8 in East County	I-8 is planned to be widened from SR 125 to Los Coches Avenue near Lakeside. The current configuration, which narrows from 8/6/4 lanes would be widened by adding 2 HOV lanes.	La Mesa El Cajon San Diego
I-15 Riverside Connection	I-15 from SR 78 to the Riverside County line serves interregional traffic as well as commuters that live in Riverside County but work in San Diego County. Addition of 1 HOV lane or conversion of 1 existing mixed flow lane to an HOV lane in each direction would be studied for implementation by 2010. The addition of HOV to HOV connectors at the I-15/SR 78 interchange is planned.	Escondido County of San Diego
I-15 Managed Lanes	The environmental document for this project is scheduled for completion by late 2002. The middle segment, which stretches from SR 56 to Centre City Parkway in Escondido, is fully funded to build 4 managed lanes with construction of its first phase near SR 56, scheduled to begin in late 2002. Design sequencing may allow widening across Lake Hodges by 2005, and full widening by 2008. Design work on the north and south segments has begun for Bus Rapid Transit centers at various locations along the corridor. A series of operational improvements, including reconstruction of the I-15/SR 56 interchange and addition of auxiliary lanes, are under construction, with additional projects beginning construction in 2003.	San Diego Escondido
SR 15/I-15 from U.S. Naval Reserve at 32 nd Street to SR 163	SR 15/I-15 from I-5 near the U.S. Naval Reservation at 32 nd Street to SR 163 is planned to be widened from its current configuration of 4 lanes from I-5 to SR 94, 6 lanes from SR 94 to I-805 and 8 lanes from I-805 to SR 163 to 8 lanes through the entire corridor, plus 2 HOV lanes from I-805 to SR 163. HOV to HOV connections at two freeway interchanges, SR 15/I-805 and SR 15/SR 94, are also planned.	San Diego U.S. Marine Corps

Table 2-4. Continued

Roadway Corridor	Proposed Improvement	Jurisdiction
I-805	Two new managed lanes in each direction would run from SR 905 in the South Bay to I-5 in Sorrento Valley. The Mission Valley Viaduct would also be widened from its existing 8 lanes to 12 lanes. Future detailed studies would evaluate the HOV/managed lanes and potential auxiliary lanes in the corridor.	San Diego Chula Vista San Diego County National City
SR 11	SR 11, planned as a 4-lane freeway, would extend from the planned SR 905/SR 125 interchange to a proposed new federal Port of Entry (POE) located about 2 miles east of the existing Otay Mesa POE. SR 11 also includes a direct, secure truck access route from the federal inspection facility to the California Highway Patrol's Commercial Vehicle Enforcement Facility for northbound traffic, as well as dedicated lanes for southbound truck traffic. The environmental studies are anticipated to be complete by 2005.	San Diego San Diego County
SR 52 (East)	SR 52 would be built as a 4-lane freeway from SR 125 east to SR 67 by the year 2009. This route would parallel I-8 and would remove some through traffic from arterials such as Mission Gorge Road, Mast Boulevard, Prospect Avenue, Fletcher Parkway, and other freeways (I-8, SR 67).	Santee
SR 52 from I-5 to SR 125	Various widening modifications are planned for SR 52 from I-5 near La Jolla and SR 125 in Santee. Widening from I-5 to I-805 will add 2 mixed flow lanes. From I-805 to I-15, the widening would include 2 additional mixed flow lanes plus two HOV lanes. Traffic from I-15 to SR 125 has a significant directional split to warrant adding 2 additional mixed flow lanes plus 2 managed, reversible lanes. HOV to HOV connections are also planned for the I-805/SR 52 interchange.	San Diego U.S. Marine Corps Santee
SR 54 - SR 125 (South Inner Loop)	The south inner loop, connecting SR 94 in Lemon Grove with I-5 in the National City/Chula Vista area, would provide direct travel service between the South Bay and East County cities. The loop provides traffic congestion relief among major portions of SR 94. The Sweetwater/SR 125 section is scheduled for completion in 2003. Ultimately this loop would have 6 lanes with 2 HOV express lanes.	Lemon Grove Chula Vista National City San Diego County
SR 56	This proposed 6-lane freeway would connect I-5 at Carmel Valley (coast) with I-15 (inland). SR 56 is the only proposed east-west freeway between the 22-mile gap separating SR 52 and SR 78. The segment between	San Diego

Table 2-4. Continued

Roadway Corridor	Proposed Improvement	Jurisdiction
	Black Mountain Road and Carmel Country Road is currently under construction. The remainder of SR 56 will open in 2004 as a 4-lane freeway, with future widening to 8 lanes, including 2 HOV lanes.	
SR 67 from Maplevue to Dye Road	SR 67 would be widened from a 2-lane conventional highway to a 4-lane conventional highway.	San Diego County Poway
SR 75/SR 282	Preliminary studies are underway to recommend potential alternatives to relieve traffic congestion in the City of Coronado due in part to the commuter traffic with destination N.A.S. North Island. Some of the potential alternatives being studied include tunneling a direct access from the military facility's Alameda Boulevard entrance to Glorietta Boulevard near the Coronado-San Diego Bay bridge and providing 2 potentially reversible lanes. The studies are scheduled for completion by mid-2003.	U.S. Navy Coronado Unified Port District
SR 78	Widening SR 78 from 4 lanes to 6 was completed in the early 1990s. The 2030 RTP proposes widening from 6 lanes to 8 lanes.	Escondido San Diego San Diego County
SR 76 (East)	Construction of the 9-mile-long SR 76 (West) expressway from I-5 to Jeffries Ranch Road was completed in 1999. Environmental studies on the remaining 9-mile-long segment to I-15 are underway and anticipated to be complete by 2006, with plans to upgrade the conventional highway from 2 lanes to 4 lanes.	Oceanside San Diego County
SR 94 - SR 125	The SR 94/SR 125 corridor would be widened from its existing 6- and 8-lane configuration to an 8-lane plus 2 HOV lane configuration. Operational improvements at various interchanges are also proposed.	San Diego County
SR 94 from SR 125 to Steele Canyon Road	SR 94 from SR 125 to Steele Canyon Road is planned to be widened. The segment from SR 125 to Avocado Boulevard would be widened from 4 freeway lanes to 6 freeway lanes and Avocado Boulevard to Jamacha Road from 4 conventional highway lanes to 6 freeway lanes. From Jamacha Road to Steele Canyon Road, SR 94 would be widened from 2 to 4 conventional highway lanes. A SANDAG Rural Highway 94 Study done in 2000 concluded that widening of SR 94 to Steele Canyon Road was needed to address congestion from current and future residential growth along the rural SR 94 corridor as well as growing international traffic from Tecate, Baja California.	Lemon Grove La Mesa San Diego County

Table 2-4. Continued

Roadway Corridor	Proposed Improvement	Jurisdiction
SR 125 (South)	The future SR 125 South is planned as a toll facility between SR 905 on Otay Mesa and the SR 54 San Miguel Connector. The 2030 RTP identifies initial construction of the 10.6-mile SR 125 tollway/privatization project as a 4-lane tollway with 6 interchanges. Widening to 8 lanes north and 6 lanes south of Telegraph Canyon Road is anticipated by 2020, with a wide median for possible HOV/transit lanes after 2020. Groundbreaking for the tollway is anticipated in 2002.	San Diego Chula Vista San Diego County
SR 125 from SR 54 to SR 52	Two remaining segments currently under construction will close the gap on a continuous SR 125 Freeway from SR 54 in Spring Valley to SR 52 in Santee. These segments, from Jamacha Road to SR 94 and from Navajo Road to Grossmont, are scheduled to open to traffic by 2003. Future HOV to HOV connectors between I-8 and SR 125 are planned.	San Diego County Lemon Grove El Cajon
SR 241	The Foothill Transportation Corridor South in Orange County would be parallel to, and east, of I-5. A segment of this corridor extends within the San Diego region, intersecting with I-5, approximately 1 mile south of the Orange County line.	Camp Pendleton
SR 905 Extension	This project would improve transportation to and from the Otay Mesa Port of Entry. Construction of an interchange at Siempre Viva Road is planned to begin in fall 2003. The project is scheduled to be completed by 2007. Future widening of SR 905 from I-5 to Heritage Road from 4 to 6 lanes is planned.	San Diego
Regional Arterial Improvements	Widening and gap closure projects will be implemented at key regional arterial facilities. These will be evaluated on a regional basis based on their impact to enhance mobility.	All jurisdictions

Source: SANDAG 2002a

Table 2-5
2030 RTP Mobility Network Regional Bikeway Corridors

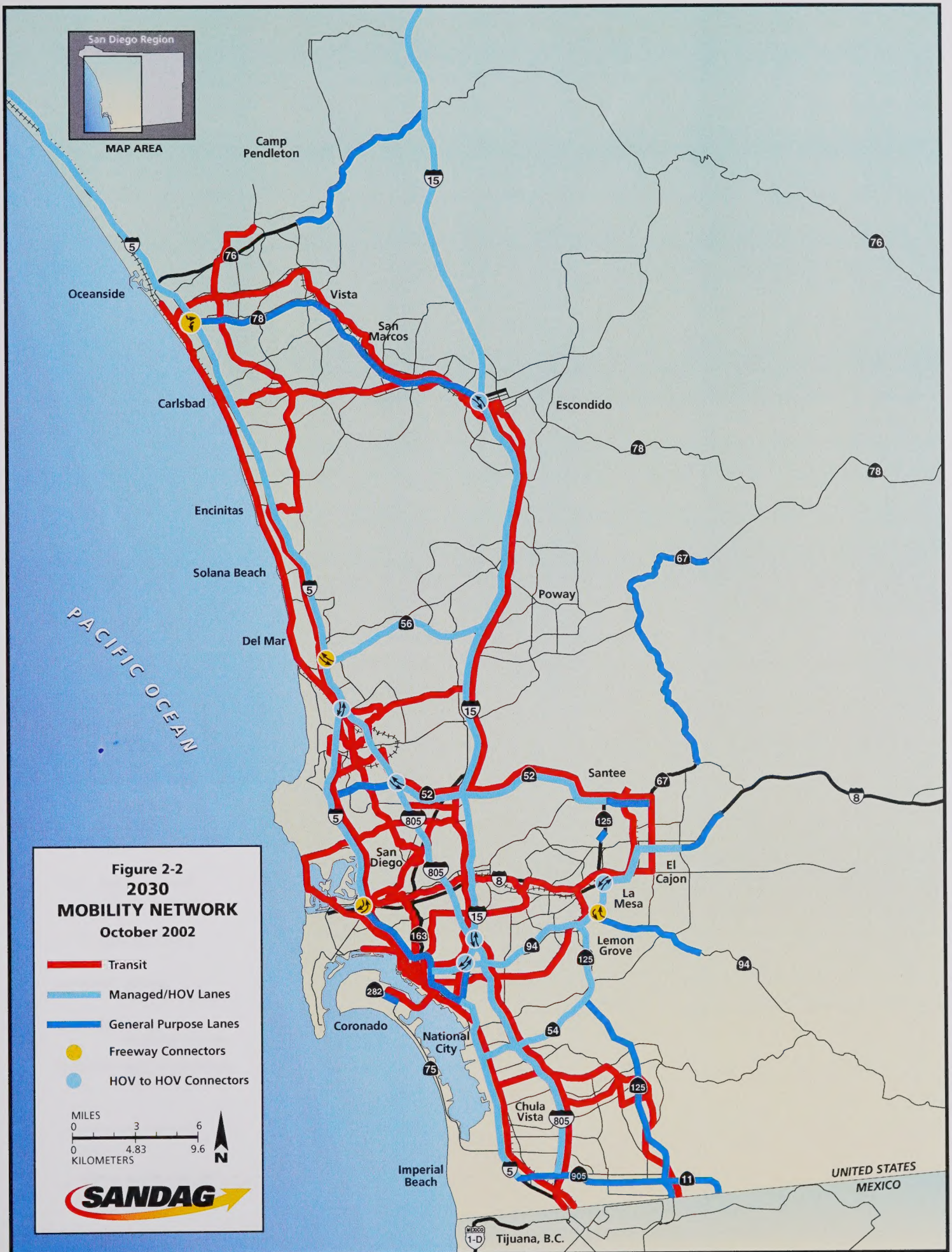
Bikeway	Corridor Served
Coastal Rail Trail	Oceanside, Carlsbad, Encinitas, Solana Beach, Del Mar, San Diego
Camp Pendleton	Oceanside to San Clemente
I-15 Bikeway	Riverside County to Mid-City San Diego
San Luis Rey River Trail	North Oceanside from the Beach to SR 76
Inland Rail Trail	Escondido, San Marcos, Vista, Oceanside, adjacent unincorporated areas
Palomar Airport Rd./San Marcos Blvd.	Carlsbad to San Marcos
La Costa Ave./ Rancho Santa Fe Rd.	Encinitas to San Marcos
Escondido Creek Bikeway	Escondido
Mid-County Bikeway	Del Mar, San Diego, Rancho Santa Fe, Escondido
SR 56 Bikeway	San Diego, Poway
Scripps Poway Parkway	Scripps Ranch, Poway
Central Coast Corridor	Torrey Pines, La Jolla, Pacific Beach, Mission Beach, Mission Bay, Point Loma, Downtown San Diego
SR 52 Bikeway	Clairemont, Kearny Mesa, Santee
San Diego River Bikeway	Ocean Beach, Mission Valley, Mission Trails Regional Park, Santee
East County - Centre City Corridor	La Mesa, Mid City, North Park, Downtown San Diego
SR 94 Corridor Bikeway	Lemon Grove, Mid City, Downtown San Diego
SR 125 Corridor	Santee, La Mesa, Lemon Grove, Bonita, Chula Vista, Otay Mesa
Sweetwater River Bikeway	Chula Vista, National City, Bonita
SR 54 Bikeway	Lakeside, El Cajon, Rancho San Diego, Spring Valley
I-8 Corridor	Lakeside to Imperial County
Bayshore Bikeway	San Diego, Coronado, National City, Chula Vista, Imperial Beach
Chula Vista Greenbelt	Otay River, Chula Vista, Otay Lakes
SR 905 Corridor	Otay Mesa, International Border

Source: SANDAG 2002a

- Freeway Management — loop detectors, cameras, communications, and new computer hardware and software to improve incident detection and clear accidents, coordinate freeway and arterial operations, and allow automatic ramp meter operations;
- Arterial Management — improvement of traffic signal timing, freeway ramp signal coordination, bus rapid transit service, and rail crossings;
- Transit Management — new in-vehicle equipment and computers to improve route planning, scheduling and on-time performance; and use of smart cards for transit users;
- Traveler Information/Performance Monitoring — integration of real-time data from freeway, arterial, and transit systems into a travel information system. Includes use of wireless cellular and personal digital assistant (PDA) Internet devices, and in-vehicle navigation systems.

Demand Management

This component looks at various alternatives to reduce peak period travel by shifting demand to noncongested times, to alternative modes, or by eliminating peak hour vehicle trips. It encourages the use of alternative modes such as a regional vanpool program; regional bike locker program; and a guaranteed ride home for registered carpoolers, vanpoolers, transit riders, and those who bike or walk to work on a regular basis. The 2030 RTP aims to reduce peak period travel demand by at least 5 percent by 2030. This will be achieved in part by increasing the availability of annual funding for the above programs as well as for new programs that encourage teleworking and flexible work hours.









CHAPTER 3.0

ENVIRONMENTAL SETTING

The San Diego region includes three general physiographic regions: coastal, montane, and desert. The highest population densities are found in the western third (coastal) of the region where topography and mild coastal climatic conditions have attracted intensive development. Consequently, existing transportation infrastructure is most concentrated and diverse in the populated coastal areas in order to meet the needs of the greatest number of people.

The 2030 RTP provides the planning foundation for transportation improvements that takes into consideration the San Diego region as well as outside the region's boundaries. The area supports an existing network of freeways, expressways, regional arterials, transit corridors, regional bus and rail transit corridors, bikeways, commercial and general aviation facilities, seaport facilities, and ports-of-entry at the United States-Mexico border. These facilities serve the region's 18 local jurisdictions, the County's unincorporated areas, as well as interregional and international commuting.

The largest proportion of major transportation facilities are located in the western third of the region to best serve the highest and fastest growing population areas. This includes the following major freeway and expressway system:

- Interstate 5 (I-5)
- Interstate 8 (I-8)
- Interstate 15 (I-15)/State Route 15 (SR 15)
- Interstate 805 (I-805)
- State Route 52 (SR 52)
- State Route 54 (SR 54)
- State Route 56 (SR 56)
- State Route 67 (SR 67)
- State Route 75 (SR 75)
- State Route 76 (SR 76)
- State Route 78 (SR 78)
- State Route 79 (SR 79)
- State Route 94 (SR 94)
- State Route 125 (SR 125)
- State Route 163 (SR 163)
- State Route 188 (SR 188)
- State Route 209 (SR 209)
- State Route 241 (SR 241)
- State Route 274 (SR 274)
- State Route 282 (SR 282)
- State Route 905 (SR 905)

An existing trolley network serves the I-5 corridor from the Old Town station, near the intersection of I-8 and I-5 south, through downtown San Diego to the United States/Mexico border. A bay-side loop extends easterly around downtown to El Cajon and Santee. In addition, an easterly service line

extends from Old Town through the Mission Valley/I-8 corridor to the area near Mission San Diego de Alcalá, just east of the stadium. A trolley extension is under construction from this station to the east via San Diego State University. It will eventually connect in La Mesa to complete the loop.

The region also is served by two passenger railroad operators. Amtrak provides intercity rail services connecting San Diego to the rest of the nationwide system. The NCTD operates a commuter rail called the Coaster, between Oceanside and downtown San Diego. There also are two freight operators, the Burlington Northern and Santa Fe (BN&SF) and the San Diego and Imperial Valley Railroad (SD&IV). Commuter and local bus service is provided throughout the region, including high-volume service to the north county, central, and south bay/border areas. Regional corridor bikeways are primarily aligned in conjunction with major transportation corridors and are supported by an extensive feeder network and local streets.

San Diego International Airport-Lindbergh Field, located on the north side of San Diego Bay and approximately 2 miles northwest of downtown San Diego, is the major commercial airport in the region. The region also is served by a total of 11 general aviation airports, 4 military airports, 27 civil heliports (7 on public airports), and 8 military helicopter facilities (4 on military airports).

The general aviation system includes the following: (1) Montgomery Field, (2) McClellan Palomar Airport, (3) Gillespie Field Airport, (4) Ramona Airport, (5) Brown Field Municipal Airport, (6) Oceanside Municipal Airport, (7) Borrego Valley Airport, (8) Fallbrook Community Airpark, (9) Jacumba Airport, (10) Agua Caliente Springs Airport, and (11) Ocotillo Airport. The four military airports in the region include: (1) Marine Corps Base (MCB) Camp Pendleton, (2) Marine Corps Air Station (MCAS) Miramar, (3) Naval Air Station (NAS) North Island, and (4) Imperial Beach Naval Outlying Field.

The San Diego County Regional Airport Authority is the regional government entity with jurisdiction over all airport planning. In addition, the San Diego County Regional Airport Authority operates Lindbergh Field. The RTP addresses long-term ground access improvements to Lindbergh Field.

Ocean cargo and cruise ship facilities are located on San Diego Bay, providing facilities necessary for the transfer of goods to and from the region via cargo vessels and for an expanding cruise industry.

Maritime commerce is carried out at two marine terminals located on San Diego Bay B the 10th Avenue Marine Terminal in the City of San Diego and the National City Marine Terminal at 24th Street. Together, the two marine terminals handle approximately 2.5 million tons of cargo annually.

The San Diego region shares a common international border with the municipalities of Tijuana and Tecate in the State of Baja California, Mexico. Three ports of entry serve the region – San Ysidro, Otay Mesa, and Tecate. San Ysidro is the busiest land port of entry in the western hemisphere. It is the region's primary gate for auto and pedestrian traffic in both directions.

Commercial truck traffic uses the Otay Mesa and Tecate ports of entry. The Otay Mesa port crossing has 100 bays for handling truck inspections and also serves autos and pedestrians. Truck, auto, and pedestrian traffic use the same facility at Tecate. The Otay Mesa crossing is the busiest commercial crossing along the California-Baja California border.

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CHAPTER 4.0

ENVIRONMENTAL ANALYSIS

This section describes the existing conditions of the study area and the environmental impacts that would occur with adoption of the proposed 2030 RTP. The analysis of each environmental issue area includes a description of the existing conditions within the study area; the thresholds for determining significance, an evaluation of how the specific resource would be affected by the adoption of the plan; mitigation measures to reduce significant impacts; and residual impacts after mitigation. For purposes of the 2030 RTP impact analysis, buildout conditions are compared to the 2030 No Project Conditions as described in Chapter 7.0. Alternatives to the proposed project are also discussed in Chapter 7.0.

The study area analyzed in this document (i.e., where potential impacts are anticipated) includes the entire San Diego region, but focuses primarily on the western half where the population is centered. As noted in Chapter 2.0, the 2030 RTP is a planning document that identifies a series of roadway and transit improvements, as well as policies, goals, and objectives, to maximize the transportation network in the San Diego region and best carry the future population to and from the places they need and want to go. Because it is a planning document intended to guide actions through the year 2030, the level of evaluation in this EIR is program-level and qualitative. There is not enough specific information available on the individual projects to provide detailed, quantitative analysis of specific improvements. That level of analysis will be provided in subsequent project-specific CEQA and NEPA documents when these projects are proposed.

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4.1 LAND USE

This section contains a description of the existing land use patterns in the San Diego region, summarizes ongoing planning efforts that will change the patterns of development in large areas of the region, and identifies applicable land planning guidelines. The potential for the 2030 RTP to impact land use in terms of conflict with sensitive land uses or compliance with planning goals is evaluated, and mitigation measures are identified as warranted.

4.1.1 Existing Conditions

Existing Land Use Patterns

Existing land uses throughout the County show a general pattern of urban development along the coast, with inland communities forming a second tier. Further to the east, the mountains and deserts are sparsely developed with isolated pockets of residential and agriculturally related development. Three jurisdictions that cover large areas of the region – County of San Diego, City of San Diego and City of Chula Vista – are currently updating their general plans to provide a new focus on smart growth policies. That is, they intend to place limits on the construction of new auto-dependent projects and provide support for more mixed-use and potentially higher density projects, especially near employment centers and along major transit corridors. The goal is to help create more livable communities by relieving regional traffic congestion and reducing commute times, contributing to the conservation of remaining open space, increasing affordable housing opportunities, and providing more environmentally friendly development.

City of San Diego

The City of San Diego contains approximately 1.3 million people, which is about 44 percent of the region's population. The central business district (downtown San Diego) is the location for the administrative center of the City of San Diego and the County government as well as many business and commercial functions. The San Diego downtown area is the subject of an ongoing redevelopment program which includes restoration of historical façades and new construction of office and residential buildings. Over \$2.4 billion has been invested in downtown redevelopment since 1975 (CCDC 2002). Over the past 15 years, a ballpark, major regional shopping center, hotels, and numerous residential units and office buildings have been built, are being built, or are planned for downtown. This construction activity reinforces the central business district as the business core

of San Diego, and today more than 75,000 people work downtown and over 20,000 live in the area (CCDC 2002).

Surrounding the central core are high density communities of mostly older single-family residences and apartment buildings which comprised the residential and commercial areas of the city prior to World War II. Transportation needs within these areas were served by local streets and streetcars connecting the areas to downtown. North Park, South Park, East San Diego, the communities of southeastern San Diego, Barrio Logan, Golden Hill, and City Heights are examples. In general, these are lower-income, higher density residential areas. Single-family homes in these neighborhoods have been replaced by multi-family units, although restoration and upgrading of the older residences are occurring throughout the area.

Projects that already implement smart growth policies can be seen throughout the city. For example, residents, planners, and designers developed a smart growth plan for the area surrounding the Euclid Avenue Transit Center. Implementation of the plan has begun with construction of the \$45 million Market Creek Plaza and a community center. In addition, many new housing units have been constructed, and are being constructed, in the Little Italy and Columbia planning areas in downtown. Both of these areas are higher density, walkable, and well served by transit.

North and west of the grid-core area, residential communities include Mission Hills, Hillcrest, Normal Heights, Kensington, Talmadge, and the College area. These are moderately high density and moderate- to high-income areas, with single-family houses and smaller apartment buildings predominating.

North of these communities stretches the east-west Mission Valley along the San Diego River. Developed in the 1960s after construction of I-8, this is an important commercial, office, residential, and recreation center with numerous hotels, the stadium, and a variety of restaurants and theaters. Regional shopping centers, high-rise office buildings, and large multi-family residential complexes, both condominiums and apartments, characterize the area, which serves as a significant employment center. In November of 1997, the Mission Valley Trolley line opened. The trolley, combined with the several bus lines that serve the area, serves the dense and diverse residential and commercial development located throughout Mission Valley. The extension of the trolley is now under construction from its current terminus at Mission San Diego Station, just east of Qualcomm Stadium, to the Grossmont Center Station via San Diego State University. It is scheduled to be open in 2005.

North of Mission Valley, there are a number of residential neighborhoods and industrial-commercial areas that were developed after World War II. The communities of Bay Park, Clairemont, Clairemont Mesa, Linda Vista, Serra Mesa, Tierrasanta, Del Cerro, and San Carlos are dominated by single-family subdivisions with a lesser number of apartment buildings. Kearny Mesa is the site of major industrial activity, with large industrial and research facilities. These rely almost exclusively on arterial streets and highways for transportation and access.

La Jolla, Pacific Beach, Mission Beach, Ocean Beach, and Point Loma are the city's coastal strip communities, which provide single-family and higher-intensity apartment complexes. La Jolla boasts of regional commercial and office activity in its small central area. The remainder of the beach communities offer significant beach-related tourist activities and hotels serving both beach recreation and the open parklands of Mission Bay.

The northern part of the city is experiencing continued growth, within the large, undeveloped tracts of land available for new construction. North of SR 52 are the higher-income residential communities of University City, Mira Mesa, Carmel Valley, Scripps Ranch, Rancho Peñasquitos, and Rancho Bernardo. Significant nodes of office, commercial, and industrial development are located in the Golden Triangle (between I-5, I-805, and SR 52), along Mira Mesa Boulevard and Miramar Road, in Sorrento Valley and near SR 56 West.

The City of San Diego also includes the communities of San Ysidro and Nestor, adjacent to the U.S.-Mexico border. These areas include a variety of residential densities as well as significant regional commercial development.

Other Incorporated Cities

The region includes 17 other incorporated cities, in addition to San Diego, located in the western section of the County along the coastline or the three major freeways (I-5, I-15, and SR 78). The cities of Solana Beach, Encinitas, Carlsbad, and Oceanside are located along the coast. Each of these cities includes an older, community core area close to the beach, with low density residential development spilling eastward. Del Mar is the County's smallest city, located on the beach, but is constrained from development by San Dieguito Lagoon and the county fairgrounds on the north, and by the City of San Diego on the east and south. Coronado, another coastal city, is located adjacent to NAS North Island and also is physically constrained from urban sprawl by the Air Station and San Diego Bay. Imperial Beach, on the coast in the southern corner of the County, includes a

beach-oriented area with older residential development. Imperial Beach is also surrounded by other cities (San Diego and Coronado) and does not contain any large tracts of undeveloped land.

The cities of Lemon Grove, La Mesa, Santee, and El Cajon (east of the city of San Diego) and Chula Vista and National City (south) formed the original suburbs of San Diego. Each of these cities has an older urban core and well-established residential areas. El Cajon, Chula Vista, and National City have significant industrial and commercial activities within their boundaries. Like the northern coastal cities, Chula Vista is expanding rapidly to the east into undeveloped agricultural areas. For example, construction has begun on the 23,000-acre master planned community of Otay Ranch. The 11 urban villages of Otay Ranch will each have a core area with many transit- and pedestrian-oriented opportunities.

The four North County inland cities of Vista, San Marcos, Escondido, and Poway contain large-lot, single-family residences and provide employment in regional commercial, industrial, and office complexes.

Unincorporated Areas

San Diego County contains the remaining unincorporated areas. The inland unincorporated towns of Fallbrook, Valley Center, Ramona, Bonita, Spring Valley, Casa de Oro, Julian, Alpine, Pine Valley, Descanso, and Borrego are located in more rural areas and consist of a community core surrounded by an expanse of predominantly undeveloped land.

The county also contains large federally owned areas, including the U.S. military bases at Camp Pendleton, Miramar, North Island as well as Cleveland National Forest and land owned by the Bureau of Land Management. In addition, tribal lands are located generally in the central part of the county between the developed coastal strip and the mountains. Anza-Borrego Desert State Park includes much of the desert portion of the county.

Agriculture

Agriculture is not only an important contributor to the economy of the San Diego region, it also is a primary land use in the unincorporated area of the county. The amount of land devoted to agriculture is declining. In 1991, approximately 172,790 acres were planted with various field, vegetable, fruit and nut, flower, and nursery products (County of San Diego 1991). (Acreage for

livestock, poultry, dairy, and eggs production was not included.) By 1999, the total acreage had decreased to approximately 69,357 acres and further decreased to approximately 66,617 acres in 2000 (County of San Diego 2001).

Suitability of soils, climate, water availability, and market demand all affect the economic viability of agriculture. The U.S. Department of Agriculture estimates that with proper preparation to increase permeability or improve texture, and with adequate water supply, nearly 88 percent of the land within the region's boundaries has a value for agriculture, in cultivated crops, livestock range, orchard, or nursery stock. San Diego's climate is a primary factor in this determination, since it allows year-round cultivation (of flowers and vegetable crops, for instance).

The economic feasibility of agriculture is greatly affected by urbanization. As land prices rise with development, costs of production for agricultural products increase. Without a proportionate increase in product sales price, agriculture becomes less viable. This is affected by government subsidies, whether in the form of direct payments or reduced water prices or property taxes. In California, for example, the Williamson Act (California Land Conservation Act), now being phased out, used to allow local governments to contract with landowners to keep their land in agriculture and open space uses in return for a decreased tax rate for the owner. Decreased property taxes can temporarily offset the increasing land prices associated with urban development.

Acreage devoted to agriculture has decreased over the last decade and increasing development will continue to encroach onto land currently used for agriculture.

Regulatory Framework For Planned Land Use

Land use within each city and the County is governed by general plans, which designate appropriate land uses throughout the jurisdiction and define specific goals, policies, and objectives the local jurisdiction has determined to be important. In general, most plans recognize existing land uses and determine acceptable uses for future uses of undeveloped land. Some cities also have community plans. A community plan is used to plan the future of a particular area to a finer level of detail than the general plan, and supplements the policies of the general plan.

The member agencies of SANDAG also work together in efforts to provide more regional planning. The California legislature has provided direction for land use planning in the coastal zone via the

California Coastal Act and directs each county with an airport to establish an airport land use commission. These key planning guidelines are discussed further below.

Regional Growth Management Strategy

As congestion has grown over the past decade, the region has begun to reevaluate the transportation-land use planning process, with a call for better coordination between land use and transportation planning efforts.

SANDAG has been involved in this reevaluation as a part of the Regional Growth Management Strategy. In 1999, SANDAG's growth management strategy effort, REGION2020, was organized into five distinct but interrelated elements: economic prosperity, transportation, open space and habitat conservation, housing and home ownership, and state-local tax reform. The premise of the strategy was that most growth-related issues could be addressed within the context of one or more of these five elements, and that they all build upon smart growth principles.

The principles underlying the REGION2020 are now collectively referred to as smart growth policies. They focus on increasing land use intensities in those areas that have the best transit access, as well as in the region's traditional community and city centers. They encourage local jurisdictions to include more mixed uses (office-residential-retail) near transit, and to include residential uses in or near large employment areas, particularly those that are not well served by transit. The implementation of smart growth policies gives people more choices with regard to their housing and transportation needs.

Smart growth also involves the improvement of pedestrian facilities, which enables people to meet many of their daily travel needs without using an automobile. Better pedestrian facilities encourage walking as a desirable way to travel in the region's neighborhoods. In addition, the design of our neighborhoods and commercial centers can be changed to encourage walking as a mode of travel.

The SANDAG Board of Directors accepted the inclusion of smart growth in the 2020 Cities/County Growth Forecast for planning purposes. The 2020 RTP was then based on that forecast. More recently, the Board has also directed that the 2030 RTP and the 2030 Regional Growth Forecast be based on smart growth land use patterns, with an emphasis on jurisdictions identifying smart growth locations that work for them. All 18 cities and the County government have adopted a resolution in

support of smart growth. The population forecasts discussed in Section 4.2 also are based on smart growth policies that are reflected in the 2030 Regional Growth Forecast (SANDAG 2002a).

Building upon REGION2020 and in an effort to further strengthen the relationship between local and regional planning efforts, SANDAG has recently initiated a Regional Comprehensive Plan (RCP). The RCP will provide a unified vision for the San Diego region and focus on addressing various regional priorities in addition to transportation. In addition, it will include a regional infrastructure needs assessment and financing strategy necessary to maintain quality of life. It anticipates that the RCP call for an increase in infill, redevelopment, and mixed-use development already underway in the region's urban areas, especially in areas close to the Regional Transit Vision (RTV) stations and corridors and will build upon many of the smart growth concepts in the REGION2020 growth management strategy. The policies in the RCP and the funding packages in the financing strategy will focus on incentivizing smart growth development in the region. The RCP is partially funded by a \$1 million grant from the California Department of Transportation (Caltrans). The RCP is currently being prepared and a preliminary draft is expected in late 2003.

General Plans

As noted above, land use within each city and the County is governed by general plans. General plans consist of a number of elements, including land use, circulation, housing, conservation, open space, noise, and safety; other elements may be included at the discretion of the jurisdiction which relate to the physical development of the county or city. The general plan must be comprehensive and internally consistent. Each element is to have equal status and be consistent with other elements.

Of particular importance is the consistency between the circulation and land use elements; the general location and extent of existing and proposed major thoroughfares, transportation routes, terminals, and other public utilities and facilities must be consistent with the general distribution and intensity of land for housing, business, industry, open space, education, public areas, waste disposal facilities, agriculture, and other public and private uses.

California Coastal Act

The California Coastal Act of 1976 was enacted to "protect, maintain and where feasible, enhance and restore the overall quality of the coastal zone environment and its natural and artificial resources" (Public Resources Code Section 30001.5). The act applies to the coastal zone, which is generally defined as extending offshore to the limits of the state's jurisdiction and from the shoreline

1,000 yards upland from the mean high tide line. The act required each jurisdiction within the coastal zone to prepare a local coastal program consisting of land use plans, zoning, and other implementing actions as needed to comply with the policies set forth in Chapter 3 of the act. These affect housing and other land uses, coastal access, and public works, including all manner of transportation facilities. The County and City of San Diego, the coastal cities, and the Port District are subject to these requirements. The adopted local coastal programs are administered by the local agencies with ultimate approval by the California Coastal Commission.

Airport Land Use Commission

In each county containing a public use airport, an airport land use commission (ALUC) is required to assist local agencies in ensuring compatible land uses in the vicinity of existing or proposed airports; to coordinate planning at state, regional, and local levels; to prepare and adopt an airport land use plan as required by Public Resources Code Section 21675; to review plans, regulations or location agencies, and airport operators; and to review and make recommendations regarding the land uses, building heights, and other issues relating to air navigation safety and promotion of air commerce. The San Diego County Regional Airport Authority is the ALUC for the San Diego region. It is responsible for the preparation of comprehensive land use plans (CLUP) for the civilian airports. The military airports are exempt from the state's requirements for a CLUP, although the Department of Defense agreed to the development of a CLUP for MCAS Miramar (formerly Naval Air Station Miramar). Local jurisdictions are responsible for land use control around the airports.

Future Land Use Patterns and Planning

Preservation of Open Space and Agriculture

A key component of any smart growth strategy is the preservation of the natural environment to provide visual and spatial relief from the built environment, maintain a sense of place, and assure the protection of the region's native plants and animals. Through efforts such as the Multiple Species Conservation Program (MSCP) and the proposed Multiple Habitat Conservation Program (MHCP), the cities and the county have identified remaining natural habitat areas and have designed an interconnected region wide preserve system to assure the viability and movement of species throughout the region (see Section 4.10, Biological Resources). When fully implemented, the regional preserve system will serve as a natural urban limit line focusing growth away from sensitive habitat areas.

In general, ongoing land planning efforts provide a shift in the region's planning focus away from the type of urban development that promotes urban sprawl. Nevertheless, until smart growth policies are fully implemented, much of the area's new development will consist of low density, single-family residences located east of the developed coastal strip. Eastern Otay Mesa, the area east of El Cajon (in the vicinity of Crest, Dehesa, and Jamul), east of Escondido and north of San Pasqual, and land east of Vista and eastern Oceanside to well east of I-15 are examples of urban sprawl. These areas are planned to be developed with single-family residences in low density, large-lot patterns.

Adopted general plans also call for filling in of existing vacant land between development in the current urbanizing areas. The Olivenhain area (a community in eastern Encinitas) could be developed under the existing land use designations to extend the existing pattern of residences from the more densely settled areas of Encinitas to southern San Marcos. Development also is planned to occur in the San Luis Rey area between Oceanside and Bonsall and between Bonsall and Fallbrook.

Adoption of the County's MSCP Subarea Plan and other regional habitat conservation planning efforts have resulted in the large scale implementation of habitat preservation policies. These policies have had a profound effect on land use development, especially in previously undeveloped portions of the County's unincorporated area. Endangered species and sensitive habitat protection have combined to constrain development even where otherwise allowed under the existing general plan. While some development is still anticipated, environmental constraints limit development in areas where it was previously anticipated. For example, Ramona, under the adopted plan and zoning regulations, would have become the center of a large rural residential area extending in all directions from the existing community center. Anticipated development levels are no longer assured given the recent discovery of sensitive and/or endangered species in the area. Similarly, habitat preservation efforts and implementation of smart growth policies over time will reduce large scale development pressure on other rural county areas. Some development is still expected to occur in isolated areas of private ownership within Anza-Borrego Desert State Park, Cleveland National Forest, and areas of low habitat sensitivity.

Nearly all cities in the region have identified areas where redevelopment efforts will be focused: Carlsbad, Oceanside, and Chula Vista have all set aside certain portions of their older centre city areas for redevelopment. The City of San Diego is implementing redevelopment plans for the downtown area and for older commercial strips in the Mid-City area (east of downtown and south of I-8).

Nearly all cities and the County of San Diego have adopted general plans and zoning regulations which address, to some degree, the preservation and use of agricultural lands. The County recognizes the value of agriculture as a long-term land use and has developed policies to improve and promote methods for preserving agriculture.

The City of San Diego General Plan includes agriculture within the open space element, as part of the “managed production of resources.” The City owns a large agricultural preserve in the Lake Hodges-San Pasqual Valley, which is now part of the San Dieguito River Park. This area is expected to remain in long-term agricultural use (SANDAG 2000a). However, most agriculturally zoned land in the city is expected to eventually convert to urban or suburban land uses.

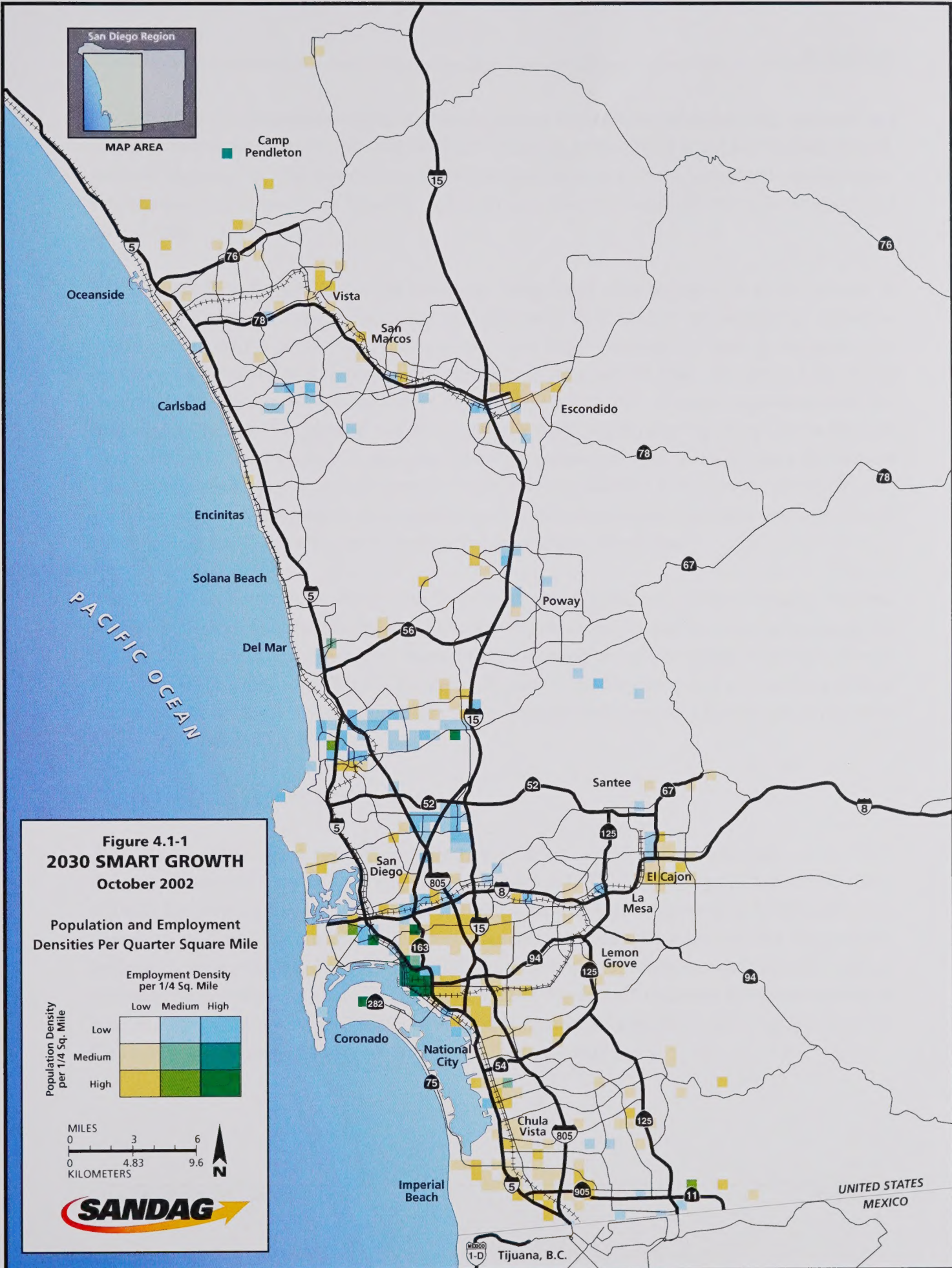
Escondido, however, considers preservation of agricultural areas necessary to protect community identity (City of Escondido 1990) and provides both agricultural land use designations and overlay zones.

Future development patterns are important in determining the need for and location of future transportation improvements. Planned intensification of land uses in already developed core areas (infilling and redevelopment) will increase the demand on already congested streets and transit systems. The shift to implement smart growth policies also directs widespread growth away from rural areas because existing country roads will not support extensive development. Figure 4.1-1 illustrates the patterns of focused population and employment in key areas of the region projected in 2030 based on smart growth.

In the San Diego region, there are three key jurisdictions undergoing a general plan update process-the County of San Diego and the cities of San Diego and Chula Vista. The status and objectives of the three processes are described below.

County of San Diego General Plan Update

The draft 2020 general plan for the region’s 3,500 square miles of unincorporated area is designed to accommodate a planned 50 percent increase in population, but it would be concentrated in “county towns” while retaining large blocks of open space between the key centers such as Fallbrook, Ramona and Julian. It is intended to incorporate smart grown concepts by putting growth in already dense areas that better facilitate public transit, while preserving rural and forest land.



The plan proposes increased housing densities in parts of Ramona and other outlying rural cores and allows for a concentrated mix of residential and industrial development along the east side of I-15, north of Highway 76. But deeper into the back country, densities would be reduced. For example, existing densities of one home for every 4, 8 or 20 acres would be replaced by one home on 40 and 80 acre lots.

The General Plan Update process is evolving. Each local planning/sponsor group for the 24 community planning groups in the county were informed of the Update and asked to provide their vision (or target) for population in their area. The target numbers for each group were then considered by County staff in preparing a preliminary consolidated plan. Table 4.1-1 shows the existing population, population capacity of the existing General Plan, proposed population under the preliminary General Plan Update, and the target provided by each planning group. As shown, the total population for the county jurisdiction would be reduced by over 100,000 under the General Plan Update and the population distribution would be altered as well. For example, the Pala/Pauma planning area would decrease in population (and corresponding density) by almost one-half, but the North County Metro planning area would increase by almost 20 percent.

The County is currently working with an interest-group panel of conservationists, builders, landowners and architects and conducting a series of workshops and public meetings to present the draft general plan and obtain input. Formal public hearing before the Board of Supervisors are anticipated in fall or winter 2002. The draft EIR and the draft general plan are anticipated to be circulated for public review in spring 2003 and the final 2020 plan may be adopted in summer or fall 2003 (County of San Diego 2002).

City of San Diego General Plan Update

The City of San Diego is currently involved in an effort to update its general plan. The City's *Progress Guide and General Plan* was initially adopted in 1979. The Strategic Framework Element replaces the existing chapter "Guidelines for Future Development" (adopted in 1990) within that Plan (City of San Diego 2002b). Based on population forecasts, the City of San Diego could increase by approximately 20 percent by 2020, yet only 10 percent of the city's 331 square miles is available for development. By 2030, the population is forecasted to increase by approximately 30 percent. The "City of Villages" strategy is intended to maintain the City's quality of life while the City continues to grow, and is based on a 2020 planning horizon year.

Table 4.1-1
County of San Diego General Plan Update
Distribution of Population Projections (effective April 2002)

County of San Diego Community Planning Area	Existing Population (2000 Census)	Existing General Plan Capacity	Proposed General Plan Update Distribution Map Capacity	Planning/ Sponsor Group Target ¹
Alpine	16,681	24,300	26,700	27,369
Barona	536	500	500	—
Bonsall	8,864	18,000	13,300	17,217
Central Mountain	4,877	8,500	6,100	6,567
County Islands	1,986	2,000	3,100	2,130
Crest/Dehesa	9,426	13,500	10,700	12,000
Desert	3,259	43,600	17,600	37,871*
Fallbrook	39,585	61,000	60,900	50,000
Jamul/Dulzura	9,208	33,800	22,500	18,641
Julian	3,104	5,800	3,900	3,100
Lakeside/Pepper Drive-Bostonia	72,370	92,400	85,800	85,754
Mountain Empire	6,399	31,100	12,000	14,143*
North County Metro	38,171	65,700	77,400	65,109
North Mountain	2,840	16,900	5,700	4,650
Otay	6,804	15,200	14,700	17,554
Pala/Pauma	6,156	26,500	14,600	7,000
Pendleton/Deluz	36,927	44,000	38,700	34,976
Rainbow	1,843	6,200	3,500	2,800
Ramona	33,407	67,100	56,600	52,043
San Dieguito	12,527	37,300	35,200	37,506
Spring Valley	59,324	66,000	66,800	69,292
Sweetwater	12,951	17,800	14,900	16,303
Valle de Oro	40,035	43,500	42,700	45,706
Valley Center	15,639	38,800	36,800	33,000*
TOTAL	442,919	779,500	670,700	660,731

¹ Endorsed by the Board of Supervisors, April 1998, except those targets marked with an *, which are not yet endorsed. Alternate targets would result in a population total of 654,169.

The City of Villages concept is a land use and growth strategy that would result in mixed-use village centers with attached homes and commercial and employment uses. The villages would be linked to a transit system as envisioned the Regional Transit Vision planning program. In general, this plan relies on redevelopment and infill of older commercial areas for the development of new village sites.

Like the County of San Diego, the city worked with community groups and citizen committees, held work shops, meeting and hearings. The EIR and the Strategic Framework Element were adopted by the City Council in October 2002. It should be noted that this chapter is only one in the General Plan, and others will have to be updated in the future to be consistent with the Strategic Framework Element.

City of Chula Vista General Plan Update

The City of Chula Vista recently initiated the process of comprehensively updating its General Plan which was last updated in 1989, with a 1993 amendment to incorporate 2,300 acres of Otay Ranch into the General Plan area. The process began in spring 2002 and is anticipated to be completed in approximately 2 years. The process includes completion of baseline studies to gather information on existing conditions, an intensive public outreach effort, and the formation of goals, objectives and policies to guide the City in issues of land use, circulation, growth management, public facilities, housing, open space and conservation, parks and recreation, etc. One focus of the planning process will be the enhanced linkage between transit and land use patterns that can make transit a viable alternative to the automobile.

4.1.2 Significance Criteria

Land use impacts would be considered significant if the 2030 RTP would result in the following:

- substantial conversion of undisturbed/vacant land, agricultural land, publicly owned/designated open space, or other natural resource for the development of transportation facilities beyond that to occur under the No Project condition. Such conversion from natural resource would be significant whether or not the proposed facility is consistent with local or regional plans;
- substantial conflict with the land use portion of General Plans or other applicable land use plans.

4.1.3 Impact Analysis

A substantial component of the 2030 RTP would be the expansion of transit systems, highway and freeway lanes, and HOV/managed lanes. For example, key freeway corridors such as I-5, I-15, I-805 would be widened to accommodate HOV/managed lanes as well as to support the anticipated transit system. Other new transit would include double-tracking of existing rail lines. Land use patterns along these key corridors currently reflect the presence of these regional and state-serving facilities. Accordingly, along much of these corridors there is not a substantial quantity of adjacent undisturbed/vacant land, nor would such widening be incompatible with existing or planned adjacent land uses when it can be accommodated within the existing right-of-way. However, widening could necessitate increased right-of-way and the displacement of existing built facilities. (Refer to Section 4.2 which is the Social Environment impact analysis).

Agriculture and Open Space: Where there would be new facilities constructed outside of the currently urbanized core, undisturbed/vacant land could be utilized for transportation purposes. Those lands may have historically been, or are currently being used for agriculture and/or some may be planned for MHCP or MSCP open space preserves. Depending upon the characteristics of the surrounding preserves, the underlying soils, and the particular roadway improvements, there may be impacts to agricultural or open space resources.

For example, the SR 11, SR 905 and SR 125 south corridors could result in a substantial change to currently vacant land. Both SR 125 and SR 905 would be constructed to 4 lanes under the No Project condition and SR 11 would not be constructed. With implementation of the 2030 RTP, SR 905 and SR 125 would be 4 lanes wider and SR 11 would be constructed as a 4 lane facility. The area to be traversed by SR 11 contains soils rated as farmlands of local importance and grazing land which are of less importance for agricultural usage than prime soils (Department of Conservation 1998), and the freeway corridor would avoid the planned habitat preserves. The impact would be less than significant. However, the proposed widening of SR 905 would occur in an area with prime agricultural soils and the planned habitat preserves would be impacted. There is the potential for significant land use impacts. Other planned improvements which may potentially impact preserve areas include I-8 east of El Cajon, the northern portion of I-15, SR 56, SR 67, and portions of SR 125. The conversion of vacant land and impacts to agricultural or planned open space resources may be potentially significant in selected areas.

Planned Land Use: The 2030 RTP is developed on the premise that future growth would be shifted away from the low-density unincorporated areas of the county (Table 4.1-1) and intensified within

the already developed cities in the region; particularly the Cities of San Diego and Chula Vista. The County of San Diego, though reducing the overall capacity of future growth, also assumes a shift in future development toward the more urbanized core areas of the unincorporated county (e.g., Ramona). It is assumed that the 2030 RTP would be inconsistent with some existing adopted general plans in the region (particularly the County of San Diego) since facilities needed to support those currently adopted land use patterns are not provided (e.g. widened SR 76 east of I-15 and widened I-8 from Los Coches to Willows Road). It is the intent of the 2030 RTP to accommodate growth in the already urbanized areas of the region while discouraging further sprawl into the rural areas of the region.

In addition to increased intensities in the already urbanized areas, the 2030 RTP assumes other smart growth development concepts will be implemented in the region including mixed-use development adjacent to transit corridors, development that encourages increased pedestrian and bicycling opportunities, and design concepts that provide mobility choices other than the automobile.

As noted, three key jurisdictions (County of San Diego and Cities of San Diego and Chula Vista) are currently in the process of revising their general plans to incorporate smart growth elements. These three jurisdictions account for much of the remaining, undeveloped land in the region. These three key jurisdictions have a planning horizon year of 2020, whereas the RTP has a horizon year of 2030. Smart growth concepts are also being implemented in other jurisdictions in the region. In October 2002, the City of San Diego adopted the Strategic Framework Element of their general plan with smart growth design features. The City of San Diego also is moving forward with the identification of 'Pilot Villages' that will demonstrate how villages can be incorporated into existing neighborhoods and how smart growth elements will function in the community. In addition, the City of San Diego will continue to evaluate how components of the Strategic Framework Element can be incorporated into community plans as they are updated and amended in the future. The 2030 RTP assumes implementation of these concepts in areas identified by local agencies. To support this growth strategy region-wide and as discussed in section 4.1.1 (Regional Growth Management Strategy) SANDAG will be preparing an infrastructure needs assessment as part of the Regional Comprehensive Plan. The infrastructure needs assessment will aid in the implementation of smart growth areas in the future.

The eventual buildout of the 2030 RTP is based on both high enough densities, and a pattern of densities, that will provide transportation choices that are economically viable. Success of the 2030 RTP assumes changes would be incorporated into land use plans over time. In addition, the 2030 RTP has been developed with the flexibility that will enable the plan to evolve in conjunction with changes to local land use plans. The 2030 RTP (or future updates of the 2030 RTP) will have to

continually be evaluated against land use changes that occur in local jurisdictions and respond to those changes accordingly (e.g. re-evaluate transit programming and flex-trolley operations). Based on the commitments of local agencies to implement smart growth and the flexibility of the 2030 RTP, no significant inconsistencies with local land use plans are anticipated.

4.1.4 Significance of Impacts

While the bulk of the transportation improvements in the 2030 RTP would result in the expansion of facilities in existing, heavily traveled corridors, construction of some features in isolated locations may convert resource lands, including agricultural land or planned open space preserves, to transportation uses which could be significant.

The 2030 RTP reflects smart growth land use planning trends that are assumed to be implemented by jurisdictions that have land use control over areas to be developed or redeveloped, therefore impacts to land use planning are not considered significant.

4.1.5 Mitigation Measures

As noted in Section 1.1, prior to final approval of each project, the implementing agency shall conduct the appropriate project-specific environmental review, which will include consideration of potential land use impacts. Potentially significant impacts to land uses and other issues identified within that process shall be mitigated, as feasible. The project implementation agencies or local jurisdiction shall be responsible for ensuring adherence to the mitigation measure prior to construction.

The following measures would address potential land use impacts:

- LU-1 For projects in agricultural areas, project implementation agencies shall contact the California Department of Conservation and San Diego's Agricultural Commissioner's office to identify the location of prime farmlands and lands that support crops considered valuable to the local or regional economy. Impacts to such lands shall be evaluated in project-specific environmental documents. The project implementation agencies or local jurisdiction shall be responsible for ensuring adherence to the mitigation measures prior to construction. SANDAG shall be provided with documentation of compliance with mitigation measures.

LU-2 Project implementation agencies shall identify open space areas that could be preserved and shall include mitigation measures (such as dedication or payment of in-lieu fees) for the loss of open space.

4.1.6 Residual Impacts

Mitigation measures are anticipated to reduce the quantity and severity of the loss to resource lands, including open space and agricultural resources, to below a level of significance at this planning level stage of analysis.

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4.2 SOCIAL ENVIRONMENT

4.2.1 Existing Conditions

This section contains a description of the existing population and social context within the San Diego region, and summarizes on a regional or jurisdictional level such variables as population growth, race and ethnicity, income, employment and other factors. The potential for the 2030 RTP to impact the socioeconomic makeup of the region is evaluated, the significance of impacts determined, and mitigation measures identified as warranted.

Population

Existing Population

According to the 2000 Census, the population of the San Diego region grew by 12.6 percent between 1990 and 2000, from 2,998,016 to 2,813,833 persons. This rate of growth was significantly lower than that experienced between 1980 and 1990, when the population of the San Diego region grew by more than 34 percent. As of 2001, the region's population was estimated at 2,859,900 persons, an increase of 1.6 percent in 2000. Population growth between 1990 and 2000 averaged approximately 31,600 persons per year, markedly lower than the approximately 64,000 persons per year rate of increase experienced during the 1980s. Table 4.2-1 provides the 2000 population for each of the region's jurisdictions and the forecast population through 2030.

The 2030 RTP is based on the 2030 Regional Growth Forecast, which extends to the year 2030. Through the year 2030, the region's total population is forecast to increase from the existing population of approximately 2.89 million residents to nearly 3.89 million residents (3,889,605 persons). Over 60 percent of the regions population growth is forecasted to come from natural increase (more births than deaths). In comparison, during the 1980s, only approximately one third of the region's population growth was the result of natural increase.

Table 4.2-1
2030 Regional Growth Forecast Total Population
by Jurisdiction and Sphere of Influence

	2000	2010	2020	2030	Change 2000-2030	
					Number	Percent
Jurisdiction						
Carlsbad	78,247	105,033	120,057	124,922	46,675	60%
Chula Vista	173,556	244,332	269,529	282,664	109,108	63%
Coronado	24,100	25,399	25,544	25,536	1,436	6%
Del Mar	4,389	4,751	4,855	5,103	714	16%
El Cajon	94,869	98,670	107,219	109,044	14,175	15%
Encinitas	58,014	65,232	72,955	78,762	20,748	36%
Escondido	133,559	144,644	159,560	166,119	32,560	24%
Imperial Beach	26,992	27,825	29,723	31,866	4,874	18%
La Mesa	54,749	57,337	59,650	60,932	6,183	11%
Lemon Grove	24,918	26,956	29,049	30,008	5,090	20%
National City	54,260	56,622	61,854	67,430	13,170	24%
Oceanside	161,029	183,714	208,846	214,696	53,667	33%
Poway	48,044	52,643	55,442	55,932	7,888	16%
San Diego	1,223,400	1,387,658	1,507,242	1,613,355	389,955	32%
San Marcos	54,977	74,979	87,960	106,772	51,795	94%
Santee	52,975	58,584	67,703	69,221	16,246	31%
Solana Beach	12,979	13,406	13,726	14,411	1,432	11%
Vista	89,857	99,654	109,541	113,969	24,112	27%
Unincorporated	442,919	508,236	608,416	718,862	275,943	62%
Region	2,813,833	3,235,675	3,598,871	3,889,604	1,075,771	38%
Sphere of Influence						
Chula Vista	186,489	262,228	287,810	301,112	114,623	61%
El Cajon	112,047	117,161	128,932	131,082	19,035	17%
Encinitas	58,041	65,254	73,004	78,984	20,943	36%
Escondido	150,879	165,517	193,205	208,850	57,971	38%
National City	56,251	58,720	65,406	70,972	14,721	26%
Poway	48,148	52,742	55,570	56,066	7,918	16%
San Marcos	60,166	80,759	94,074	113,066	52,900	88%
Vista	102,934	114,977	132,394	145,579	42,645	41%

Source: SANDAG - September 2002, May 2001, February 1999, revised March 5, 1999.

Note: The forecast may exceed the capacity of current general or community plans because it incorporates higher residential and employment densities within walking distance of transit stations and in certain town centers.

As shown in Table 4.2-1, the majority of the cities within the region are forecast to grow at rates below that of the region (38 percent). For some of the cities such as Encinitas (36 percent), San Diego (32 percent), and Vista (27 percent), this difference is minimal, but for others such as Coronado (6 percent), and Solana Beach (11 percent) the difference is significant. Conversely, several cities are forecasted to grow at rates significantly in excess of the regional rate. The cities of San Marcos (94 percent), Chula Vista (63 percent), and Carlsbad (60 percent) show the highest growth rates. The unincorporated areas of the region are similarly forecast to grow at a significantly higher rate than that identified for the region.

Race and Ethnicity

The San Diego region has an ethnically and racially diverse populace. Persons of Hispanic origin compose a significant component of the population within the region. With regard to this, SANDAG produced race and ethnicity makeup forecasts for the region using the following categories: Hispanic; Non-Hispanic White; Non-Hispanic Black/African American; and Non-Hispanic Asian/Other.

As of 1990, the largest component of the region's population consisted of the Non-Hispanic White population (65 percent) with the next largest group, Hispanic, making up a significantly lower proportion (20 percent). The Non-Hispanic Black/African American and Asian/Other components of the population were also smaller, at 6 percent and 8 percent respectively. As is outlined in Table 4.2-2, between 1990 and 2000 the region showed a substantial rise in Hispanic and Non-Hispanic Asian/Other populations. The Non-Hispanic Black/African American population remained roughly steady during the decade, proportionally falling only slightly.

Conversely, the Non-Hispanic White population proportionally fell a significant degree - from 65 percent to 55 percent. According to the 2000 Census, persons of Hispanic origin made up 27 percent of the population regionwide, having proportionally risen 33.5 percent from 1990. Numerically, the region's Hispanic population rose from 510,781 to 750,965 persons (47.0 percent), continuing a decades-long trend fueled by steady immigration and high birth rates, according to the census. Additionally, the projected data shows that Non-Hispanic Whites will cease to form a majority population within the region circa 2012, a date similar to that for the rest of California.

Table 4.2-2
San Diego Regional Race and Ethnicity 1990-2000 and Projected 2000-2030

Race/Ethnicity	1990		2000		2010		2020		2030	
Non-Hispanic										
White	1,633,281	65%	1,548,743	55%	1,641,925	51%	1,640,864	46%	1,598,488	41%
Black/African American	149,898	6%	154,491	5%	173,757	5%	186,467	5%	191,367	5%
Asian & Other	204,856	8%	359,576	13%	409,523	13%	506,881	14%	593,769	15%
Hispanic (Of Any race)	510,781	20%	751,022	27%	1,010,470	31%	1,264,659	35%	1,505,980	39%
Total	2,498,016	100%	2,813,833	100%	3,235,675	100%	3,598,871	100%	3,889,604	100%

Source: SANDAG 2002b

Between 2000 and 2030, SANDAG projections show that the main trends previously outlined will continue - the Non-Hispanic White population will continue to fall significantly as a proportion of the population (55 percent to 41 percent), the Non-Hispanic Black population will remain roughly level at 5 to 6 percent, and the Non-Hispanic Asian/Other population will continue to steadily increase (13 percent to 15 percent). More significantly though, the Hispanic population within the region is forecast to continue to increase markedly. Between 2000 and 2030 the population is forecast to numerically more than double, with an increase of 754,958 persons, and will have almost tripled since 1990 with an increase of 995,991 persons. By way of comparison, the regional increase in population over the same period is forecast to be 38 percent.

Age Structure

The age structure of the region's population also changed markedly between 1990 and 2000. The group between 35 and 54 years old increased numerically by 34.8 percent. The 35-44 year old group rose 20.4 percent but 45-54 year old group increased 59.8 percent, primarily due to the aging of the baby boomers' (people born during the years between the late 1940s to the early 1960s). Age groups between 20-34 years and 65-74 years proportionally lost population (-10.17% and -1.9% respectively), reflecting the relatively small number of people born during the Great Depression and the 'baby bust' period from the mid-60s to mid-70s.

Over the last decade, the very old and very young increased at rates significantly greater than the region as a whole due to a steady rise in the region's births and a decline in the death rate. The 0-9 year-old age group increased by 11.6 percent between 1990 and 2000, although the vast majority of the increase was within the 5-9 year-old age group (21.5 percent). The 10-14 year-old age groups increased by over 30 percent (31.2 percent) due to, first, the birth of children to the baby boomers and, second, the increase in the number of Hispanic and Asian immigrants, who have statistically higher fertility rates than other ethnic groups. Although recent data indicate this trend is changing substantially especially among the Hispanic population (SANDAG 2002a). The population aged 75 years and over increased by approximately 41 percent, due partly to a lowering of mortality levels. The region's population showed a median age of 29.9 years in 1990 compared to 32.2 years in 2000, an increase of 7.8 percent.

A changing age structure has many implications in terms of planning for and providing services, including transportation. For example, an increase in the need for health care and other services for

the elderly will demand transportation to and from these services. A changing school population will change the demand for schools and school-related transportation.

As is shown in Table 4.2-3, when the 2000 figures are compared with the 2030 projections, a simple yet significant set of changes emerge. Proportionally, the region's population under 50 years is forecast to fall markedly (12.4 percent) showing decreases within every single age group. Conversely, the population over 50 years will proportionally rise by almost the same amount (12.5 percent) similarly showing increases within every single age group. The groups 60-69 years and 70-74 years are forecast to show the highest proportional increases, again illustrating the prevalence of the ageing 'baby boomer' generation

Table 4.2-3
San Diego Region Population in 2000 and 2030 by Age Group

Age	2000	%	2030	%
0-4	198,621	7.1	231,397	5.9
5-9	212,829	7.6	229,420	5.9
10-14	199,669	7.1	228,788	5.9
15-19	199,919	7.1	241,096	6.2
20-24	230,953	8.2	272,423	7.0
25-29	221,273	7.9	263,095	6.8
30-34	222,087	7.9	251,041	6.5
35-39	235,183	8.4	269,933	6.9
40-44	222,080	7.9	247,488	6.4
45-49	191,181	6.8	229,697	5.9
50-54	161,622	5.7	226,200	5.8
55-59	114,391	4.1	219,550	5.6
60-64	90,275	3.2	213,719	5.5
65-69	81,763	2.9	213,640	5.5
70-74	78,296	2.8	190,015	4.9
75-79	70,851	2.5	149,222	3.8
80-84	46,433	1.7	105,970	2.7
85+	36,407	1.3	106,910	2.7
All Ages	2,813,833	100.0	3,889,604	100.0

Source: SANDAG 2002b

Social Environment

Income and Employment

As of 1990, the median household income of \$35,022 for the San Diego region, was marginally lower than that for all of California whose median income was \$35,798. Over the decade this figure increased to \$47,067, having risen 34.4 percent from 1990. The regions' median household income remained slightly lower than the median for all of California, at \$47,493. By 2030 the median household income for the region is forecast to rise to \$71,534, an increase of 52.0 percent compared to the year 2000.

In part, these data reflect the pronounced economic impacts suffered through defense cutbacks inflicted on Southern California's economy in the early 1990s, a period which saw tens of thousands of relatively well-paying jobs disappearing from such industries as aerospace. Crucially, many of the new jobs the region generated during the 'boom' years of the late 90s were relatively low-paying, with many in the service industries. Between 1990 and 2000 the total number of jobs within the region increased by 181,800 (14.9 percent). This figure is higher than the 12.6 percent population increase over the same time period. Similarly, an increase of 499,000 jobs (39 percent) within the region forecast for 2030 is only marginally in excess of the 38 percent forecasted population growth rate.

Housing

Housing Units

In 1990 there were a total of 946,240 housing units within the San Diego region (SourcePoint 2001). As of 2000, this total had grown to 1,040,049 units, an increase of 93,809 units or 9.9 percent over the decade. During the 1980s, approximately 23,000 new housing units were constructed per year. As land has been set aside via MSCP and other open space conservation programs, the open land available for new home construction has been reduced. Today there are few large tracts of land remaining for new development. For example, Otay Mesa, a 6,000-acre, largely undeveloped land mass that lies between Chula Vista and the U.S./Mexico border contains 60 percent of all the developable land within the region (San Diego Regional Chamber of Commerce 2002). As described, the County's General Plan Update will maintain rural land in its current state by minimizing development. The emphasis on smart growth land use strategies will allow for increased

density in other selected areas. The intent is to accommodate development in a more compact, environmentally-sensitive pattern of development.

As outlined above, between 2000 and 2030, the regional population is projected to increase from approximately 2.81 million to approximately 3.90 million persons. It is also estimated that approximately 339,500 new housing units will be needed to house those additional residents.

SANDAG projects that between 2000 and 2030 the total number of housing units within the region will increase to 1,379,646 units, an increase of 339,497 units. The existing general plans of the cities in the region won't produce enough houses for the more than 1 million projected new residents. The extent of the current housing market has led in part to the elevation of the median house price within the region to \$310,000 as of 2001 (San Diego Regional Chamber of Commerce 2002). As of 2001, San Diego was the eighth most expensive place to live in the country and showed a significantly lower than average homeownership rate of 55 percent, compared to 67 percent nationally. The housing deficit has also led to interregional commuting from northern Baja California, Mexico, and Riverside County by residents who work in the San Diego region.

Households

Between 1990 and 2000, the total number of households within the region increased by 9.8 percent, from 887,719 to 994,677 households. By 2030, this figure is projected to increase to 1,301,356 households or 30.8 percent. Between 1960 and 1990, the region's household size declined from 3.41 to 2.69 persons, a drop of 21 percent. However, between 1990 and 2000, the average number of persons per household increased 5.2 percent to 2.73 persons, and this trend is expected to continue. By 2030, the regional household size will reach 2.9 persons, an increase of 6.2 percent from 2000.

Vehicle Availability and Transportation to Work

As of 2000, there were 1,885,027 licensed drivers within the region. Between 1980 and 2000, the number of licensed drivers in the region increased by approximately 50 percent - a slightly higher rate than that of the regions' population, at 46 percent (Davidson 2002). While the majority of the 994,677 occupied housing units have one (34.8 percent), two (39.4 percent), or more (17.7 percent) motor vehicles, a significant number have none (8.0 percent). Generally, these tracts are located in and around downtown San Diego and along the University Avenue/El Cajon Boulevard corridors of

San Diego but there are also high concentrations of households without motor vehicles in other city centers: Oceanside, Escondido, Vista, National City, and Chula Vista.

4.2.2 Significance Criteria

The 2030 RTP would have a potentially significant impact to population and social environment if:

- the proposed transportation improvements would lead to substantial, unanticipated increases in population beyond those anticipated under the No Project Conditions.
- new construction and/or right-of-way acquisition associated with the 2030 RTP results in substantial residential or business displacement.

4.2.3 Impact Analysis

Overall, the proposed improvements in the 2030 RTP that includes highway, transit, and other modal improvements, would result in a beneficial impact to the socioeconomic environment of the San Diego region, particularly in regional corridors where the highest density of populations would be served. The goals, policies, and actions of the 2030 RTP center around incentives for encouraging alternative commuter travel choices, such as a better managed, more efficient use of the existing road network and a greatly enhanced transit system. The plan would seek to (1) relieve traffic congestion, (2) increase mobility between communities, and (3) improve quality of life to the region's residents. This increased efficiency would streamline the movement of goods into and out of the region and, in general, result in an overall decrease in commute times and travel time. The benefits of improving system efficiency and integration of these systems positively impacts the socioeconomic environment by ensuring that the region's population is well served by providing access to goods and markets while at the same time reducing impacts to noise, air quality, land use, congestion, and safety associated with goods transport.

The specific transportation improvements outlined in the 2030 RTP, which include widening of existing freeways and highways to include an expanded network of Managed/HOV lanes, maintain an emphasis on developing transit centers and corridors close to mixed-use development. With the proposed improvements, the operation and maintenance of the region's highway and arterial network would become a more robust system of connected and free flowing Managed/HOV lanes which in turn would be integrated and coordinated to support and complement the expanded transit system.

Further, the 2030 RTP focuses on the provision of new and expanded transit opportunities to serve higher income, lower density areas which produce many of the “choice” riders (those who choose to ride transit facilities instead of driving their own vehicles as opposed to “captive” riders - those who do not have vehicles). Areas with a greater proportion of no-vehicle households exist throughout the San Diego region. The 2030 RTP would increase transit opportunities within existing developed areas with “captive riders.”

As outlined above, by 2030 the San Diego region’s population is projected to increase by approximately 1 million persons. The 2030 RTP would facilitate the movement of people and vehicles through an enhanced transportation network and program policies that encourages smart growth strategies. Such land use strategies favor mixed-use, higher density projects near employment centers and along major transportation corridors as opposed to auto dependent development within outlying areas.

The proposed highway and arterial transportation improvements outlined within the 2030 RTP emphasize a more efficient use of existing roadway network and an enhanced transit network that would facilitate greater mobility between communities and employment or commercial centers within the region. Coupled with the emphasis on smart growth land use principles, these improvements, focused within urban/suburban areas, would facilitate increasing the density of development in selected core areas (e.g., Ramona) and decreased in other outlying areas surrounding Ramona. This would occur while maintaining a viable transport network, thereby increasing the capacity of existing communities to incorporate population increase as forecasted through 2030.

The potential for significant unanticipated population increases within the region caused by the proposed improvements is minimal, given that proposed improvements would predominantly improve connections between existing communities within the region. Also, the already limited supply of developable land would not be increased as a result of the proposed improvements. The 2030 RTP would not result in unanticipated population increases within the region; therefore, no significant population-related impacts would occur.

While highway and transit projects are planned to minimize impacts to the socioeconomic environment, there is the potential that certain transportation improvements, through either new construction and/or right-of-way acquisition, may displace existing residences or businesses in some areas. Transportation improvements that involve displacement of residents or businesses would represent a significant adverse impact. There is the potential for the displacement of residences or

businesses associated with the proposed improvements within the 2030 RTP. The construction of freeway to freeway connections, the widening of existing freeways and highways, and the enhancement of the transit system could result in the unavoidable displacement of residences or businesses. Some of the project elements, such as transit improvements in the form of light rail, inter-city rail, commuter rail, and transit is proposed to occur in more urbanized areas with an increased potential to cause displacement.

The displacement of homes or businesses is a highly localized impact and requires project-level analysis. As such, subsequent project-specific environmental analysis and review would be required to identify potential displacement impacts. Impacts related to the displacement of residences or businesses are considered to be potentially significant and future project-specific actions would be subject to environmental review. Where necessary, mitigation measures would be identified to reduce or avoid significant impacts to the socioeconomic environment.

4.2.4 Significance of Impacts

The proposed 2030 RTP would provide for a more efficient transportation network that allows for better movement of people between major work, housing, and school routes. The enhanced transportation system would be a beneficial socioeconomic impact.

Certain transportation improvements, such as freeway widening, new highway construction, and increased right-of-way for transit improvements, could result in potential displacement impacts. Such impacts would need to be evaluated at a project-specific level to determine significance.

4.2.5 Mitigation Measures

Social-1 Significant adverse impacts resulting from displacement of residents or businesses shall be mitigated with specific relocation measures as dictated by local, state, or federal requirements. Such measures include assistance in finding a new location, assistance with moving, or compensation for losses. Where it has been determined that displacement is necessary and displaced individuals are eligible, a relocation assistance program consistent with the State Uniform Location Assistance and Real Properties Acquisition Policies Act provides compensation and assistance in finding new residences for displaced individuals.

4.2.6 Residual Impacts

With implementation of procedures to reduce impacts from relocation, displacement impacts would be reduced to below a level of significance.

4.3 VISUAL RESOURCES

4.3.1 Existing Conditions

Regional Setting

The San Diego region is an area of abundant and varied scenic resources. The topography of the county contributes greatly to the overall quality of the existing visual setting. In general terms, the county is characterized by four topographical provinces or regions: the coastal plain, the foothills, the mountains, and the desert. Each is described briefly below.

The coastal plain ranges in elevation from sea level to approximately 600 feet above mean sea level (AMSL) and varies from rolling terraces to steep cliffs along the coastline. The coastal plain provides expansive views in all directions, with the coastline visible from some local roadways. Much of the coastal plain is already developed with varying densities of urban and rural development. Agricultural uses within the coastal area include row crops, field flowers, and greenhouses. Some of the major visual resources within the coastal area include bays, lagoons and harbors (San Diego Bay, Mission Bay Park, Los Peñasquitos Lagoon, Batiquitos Lagoon, Agua Hedionda Lagoon, Buena Vista Lagoon, and Oceanside Harbor), coastal parks (Border Field State Park, the Tijuana estuary, Silver Strand State Beach, and Torrey Pines State Reserve and Beach), and prominent land and water features (Cabrillo National Monument on Point Loma, Sunset Cliffs, La Jolla Cove, Soledad Mountain, and the offshore Coronado Islands).

The foothills of San Diego range in elevation from 600 to 2,000 feet AMSL and are characterized by rolling to hilly uplands that contain frequent narrow, winding valleys. This area is traversed by several rivers as well as a number of intermittent drainages. The foothills are also developed with various urban and rural land uses. Agriculture consists of citrus and avocado orchards as well as row crops. Notable scenic resources, including rivers, lakes, and open bodies of water, are Otay River, Sweetwater River, San Diego River, Upper and Lower Otay Lakes, Sweetwater Reservoir, Lake Hodges, San Vicente Reservoir, Mission Trails Regional Park, Santee Lakes Regional Park, Tecolote Canyon, Los Peñasquitos Canyon Preserve, Old Town State Historic Park, and Presidio Park.

The mountain region is described as having steep-sided mountains that are typically covered with granitic boulders and chaparral vegetation. Elevations range from 2,000 to 6,000 feet AMSL. The mountain areas are largely undeveloped with scattered rural communities, including Alpine, Pine

Valley, Campo, Ramona, and Julian. Scenic resources within this region include the large park areas such as the Cleveland National Forest, Agua Tibia Wilderness Area, San Mateo Canyon Wilderness, Santa Rosa Mountains State Wilderness, Palomar Mountain State Park, and Cuyamaca Rancho State Park as well as large water bodies such as El Capitan Reservoir, Barrett Lake, Lake Morena, and Lake Cuyamaca.

The eastern portion of the San Diego region is within the desert zone. Elevations range from sea level to 3,000 feet AMSL and the terrain includes mountains, alluvial fans, and desert floor. The majority of this region is contained within the Anza-Borrego Desert State Park. There is very little development in this area with the exception of the desert communities of Borrego Springs and Ocotillo. The desert region provides expansive views of the surrounding area, which is characterized by dramatic landforms and native desert habitats.

In addition to the visual resources described above, there are numerous golf courses, city and community parks, and large, primarily undeveloped landholdings such as Camp Pendleton and MCAS Miramar contributing to the scenic quality of the county. The wide range of visual features in the San Diego region help to define communities, provide visual relief from urban development, and provide recreational opportunities. San Diego's natural features (e.g., beaches, bays, lagoons, canyons, valleys, and mountains) contribute significantly to the quality of life within the region.

Scenic Highway Program

Regulatory Guidance

Recognizing the growing need to protect the state's scenic beauty, the California State legislature created the Scenic Highway law in 1963. This law established the California State Scenic Highway Program, which is aimed at the protection and enhancement of California's beauty, amenity, and quality of life. The program is administered by Caltrans and consists of the laws, incentives, and guidelines that are intended to protect the scenic, historic, and recreational resources within designated scenic highway corridors. A scenic corridor is defined by Caltrans as a "band of visible land along and generally adjacent to but outside of the highway right-of-way having scenic, historical, or aesthetic characteristics" (Caltrans 1996). It is often described as "the view from the road." A scenic highway is made up of the road itself and the right-of-way. State goals for scenic highways include the following:

1. *preserve and enhance the unique visual, biological and ecological resources of the Scenic Corridor;*
2. *prevent and eliminate (when reasonably possible) conditions that detract from or compromise the quality of the aesthetic resources of the Scenic Highway Corridor;*
3. *encourage the development and maintenance of park and recreational facilities that contribute to the aesthetic quality of the Scenic Highway;*
4. *encourage preservation of historical landmarks adjacent to the Scenic Highway; and*
5. *encourage community civic groups, to create programs that increase community interest in the visual assets of the Scenic Highway Corridor and facilitate the implementation of such programs.*

In 1971, an amendment was made to the California Government Code requiring the adoption of a scenic highway element by local cities and counties as part of their general plan. Accordingly, all local jurisdictions in the San Diego region have incorporated elements and/or related programs into their general plans to protect and enhance designated scenic highway corridors. For example, the county's Scenic Highway Program is included within the Scenic Highway Element of the County General Plan. The goals of the county's program are implemented via zoning, building, and grading ordinances. The Scenic Preservation Overlay Zone regulates area, height, and design of signs; requires site plan approval by the Director of Planning; and regulates grading within the overlay zone. The Scenic Area Regulations contained in the County Zoning Ordinance (Part 5, Section 5200) are intended to ensure exclusion of incompatible uses and structures and to preserve and enhance the scenic resources present in adjacent areas. Another example is the city of Coronado, which also has a Scenic Highway Element in its General Plan and provides implementing measures via the Sign Ordinance and the Scenic Highway Overlay Zone and has established the Scenic Highway 75 Beautification and Restoration Project.

Maintenance of the scenic quality of the coastal area is an important component of the California Coastal Commission's permit process. Local coastal programs contain land use designations and policies specifically designed to retain the aesthetic qualities of the coastal zone.

Scenic Highways in the San Diego Region

The San Diego region includes several designated or eligible scenic highways on the State Master Plan. The highways in the San Diego region that are officially designated or identified as eligible scenic highways by Caltrans are listed in Table 4.3-1

Table 4.3-1
List of Caltrans Designated or Eligible Scenic Highways in the San Diego Region

Officially Designated	
SR 75	San Diego-Coronado Bay Bridge and the Silver Strand extending from Avenida del Sol in Coronado south to Imperial Beach city limit
SR 78	from west to east boundary of Anza Borrego State Park
SR 163	from north to south boundary of Balboa Park
SR 125	from I-8 south to SR 94
Eligible for Scenic Designation	
I-5	from the international border near Tijuana to SR 75 (Palm Avenue) at the south end of San Diego Bay and from San Diego opposite Coronado to SR 74 near San Juan Capistrano (Orange County)
I-8	from Sunset Cliffs Boulevard to SR 98 near Coyote Wells (Imperial County)
SR 52	from I-5 east of La Jolla to SR 67 near Santee
SR 75	I-5 in Palm City to I-5 in San Diego
SR 76	from I-5 near Oceanside to SR 79 near Lake Henshaw
SR 78	from SR 79 near Santa Ysabel to SR 86 passing Julian
SR 79	from I-8 near Descanso to SR 78 near Julian and from SR 78 near Santa Ysabel to SR 371 near Aguanga (Riverside County)
SR 94	from SR 125 near Spring Valley to I-8 west of Jacumba
SR 163	from Ash Street to I-8
SR 209	from Point Loma to I-5

Source: Caltrans 2002.

Rapid growth throughout the county is diminishing scenic resources, especially those adjacent to major transportation corridors. The county of San Diego has identified numerous scenic highways in the scenic highway element of the County General Plan. The city of San Diego also maintains scenic routes throughout the city to afford scenic views of the community as well as to link points of visitor interest.

4.3.2 Significance Criteria

The 2030 RTP would have a potentially significant impact if:

- constituent projects, when compared to No Project, block panoramic views or views of significant landscape features or landforms (mountains, oceans, rivers, bay, or important man-made structures) as seen from the transportation facility or from the surrounding area;
- constituent projects, when compared to No Project, alter the appearance of, or from, state-designated or eligible scenic highways; or
- constituent projects, when compared to No Project, add a visual element of urban character to an existing rural or open space area or add a modern element to a historic area.

4.3.3 Impact Analysis

Implementation of the transportation improvements in the 2030 RTP could result in both short term and long-term visual impacts.

In the short term, construction of projects could result in view blockage by construction equipment and scaffolding, removal of landscaping, temporary route changes, temporary signage, exposed excavation and slope faces with contrasting soil colors, and construction staging areas. Typical best management practices utilized during construction to minimize the visual intrusion include siting construction staging areas in less visible locations (given other environmental considerations such as avoiding sensitive habitat, etc.), fencing and/or screening staging areas, and revegetation of exposed slopes at the earliest possible opportunity. Even with these typical practices, short-term visual impacts are often unavoidable.

Proposed enhancements to existing facilities and construction of new highways, roadways, and other transit facilities could create adverse visual impacts. This could occur where new alignments or road widenings would pass through primarily rural, agricultural, and/or open space areas and the contrast could potentially result in a significant impact to visual quality (e.g., widening SR 76 near I-15 or SR 67). It should be noted, however, that the rural character and existing views in some areas are already anticipated to change with future urban growth. This is true along SR 125 where the freeway has been found to have significant, unmitigable visual impacts in the project-level EIR/EIS (Caltrans 2000b), but the proposed 2030 RTP project would widen this feature by two lanes. The

project's visual contrast would be incremental. In urbanized areas, roadways and ancillary improvements such as sound walls may also result in adverse visual impacts depending on the scale of improvements and location of sensitive viewers.

Highway widening and the construction of HOV lanes and park-and-ride lots may result in some loss of existing freeway landscaping. Although these activities generally occur in urbanized environments, these actions could have an adverse effect on visual quality, depending upon nearby sensitive viewers.

Table 4.3-2 lists all the scenic highways (designated and eligible) in the San Diego region and identifies the proposed improvement or action on that roadway as well as the potential impact. Along five of the scenic routes there would be only operational improvements under the 2030 RTP, so there would be no visual change. Along other scenic highways, new travel and HOV lanes are proposed, as well as HOV connectors. Portions of I-5 and I-8 are proposed for trolley extensions (already under construction along I-8).

While there are no restrictions on scenic highway projects, local agencies and Caltrans must work together to coordinate projects and ensure the protection of the scenic value to the greatest extent possible. For example, state law requires the undergrounding of all visible electricity distribution lines within 1,000 feet of a scenic highway. In some cases, local governments have their own land use and site planning regulations to protect scenic values along a given corridor. When considering the impact of a project, both the visual appearance of the facility and the change to the landscape from that facility are considered. There is the potential for adverse visual impacts.

Several 2030 RTP transit improvements, if implemented, could potentially affect the region's visual environment. The proposed transit improvements would expand the light rail system from its existing network. Construction of rail transit facilities such as stations, bridges for grade separation with roadways, park-and-ride lots, and catenary (overhead electrical wires) could adversely affect the visual environment depending upon location and design. Future rail segments that may be elevated would have a high potential for significant visual impacts. Cut slopes on seaside bluffs with high visibility to sensitive viewers may be necessary to implement double-tracking of the rail line from Oceanside to San Diego. Development in floodplains, wetlands, wooded areas, coastal bluffs, lagoons, reservoirs, regional parks, recreational areas, agricultural lands, or in areas that include steep slopes or scenic vistas has the potential to adversely impact the region's visual resources.

Table 4.3-2
2030 RTP Projects Relative to Designated or Eligible Scenic Highways

Scenic Route	Proposed Improvement	Potential Impact
I-5 (E)	Additional HOV and general travel lanes, HOV connector, Mid-Coast light rail	Widening freeway (although primarily in median) could increase visual contrast with adjacent open hills/lagoon areas.
I-8 (E)	Additional HOV lanes in El Cajon, HOV connector, complete freeway connector at I-5, Mission Valley trolley extension	Widening freeway near Los Coches hills would increase scale and urban contrast, although road element already exists.
SR 52 (E)	Additional general travel lanes, additional managed lanes, HOV connector	Widening freeway, primarily in wide median intentionally left undeveloped for anticipated future widening, would increase size and scale of freeway relative to adjacent hills.
SR 75 (D and E)	Enhanced transit opportunities via operational improvements	No new construction, N/A
SR 76 (E)	Additional general travel lanes	Widened freeway could contrast with open space and rural hills adjacent to roadway.
SR 78 (E)	None in scenic corridor	N/A
SR 79 (E)	None in scenic corridor	N/A
SR 94 (E)	Additional general travel lanes, complete freeway connection at SR 125	Widened freeway could contrast with undeveloped slopes adjacent to roadway.
SR 125 (D)	Additional HOV lanes, complete freeway connector at SR 94	Widened freeway could increase size and scale relative to adjacent suburban development.
SR 163 (D and E)	Enhanced transit opportunities via operational improvements	No new construction, N/A
SR 209 (E)	Operational improvements only	N/A

(E) = Eligible for designation as a Scenic Highway

(D) = Officially designated as a Scenic Highway

4.3.4 Significance of Impacts

Improvement of existing highway facilities would involve relatively minor impacts to visual quality because of their location in urban environments. However, potentially significant impacts could occur if proposed alignments or facilities require large cut and fill slopes or noise barriers, whether in previously undeveloped areas or already developed urban areas. Careful alignment and design, conformance with local grading ordinances, and installation of landscaping to ensure compatibility with surrounding development would be expected to reduce some impacts to below a level of significance. Proposed rail improvements, such as double-tracking in the coastal corridor, could result in significant visual impacts.

4.3.5 Mitigation Measures

Some projects in the 2030 RTP could significantly affect visual resources by expanding or adding new transportation elements in rural or open space areas (e.g., SR 11); blocking views from adjacent areas or intruding into important vistas along roadways (via noise walls or facilities themselves); and/or changing the scale, character and quality of designated or eligible scenic highway corridors (e.g., SR 76).

Vis-1 Project sponsors shall commit to mitigation measures at the time of the certification of their environmental document. Mitigation measures may include:

- Design projects to minimize contrasts in scale and massing between the project and surrounding natural forms and developments. Avoid, if possible, large cuts and fills when the visual environment (natural or urban) would be substantially disrupted. Site or design projects to minimize their intrusion into important viewsheds and use contour grading to better match surrounding terrain.
- Use natural landscaping to minimize contrasts between the project and surrounding areas. Wherever possible, develop interchanges and transit lines at the grade of the surrounding land to limit view blockage. Contour the edges of major cut and fill slopes to provide a more natural looking finished profile.
- Design landscaping along highway corridors to add significant natural elements and visual interest to soften the hard-edged, linear travel experience that would otherwise occur.
- Replace and renew landscaping to the greatest extent possible along corridors with road widenings, interchange projects, and related improvements. Plan landscaping in new corridors to respect existing natural and man-made features and to complement the dominant landscaping of surrounding areas.
- Construct soundwalls of materials whose color and texture complements the surrounding landscape and development. Use color, texture, and alternating facades to “break up” large facades and provide visual interest.

- Where there is room, landscape the soundwalls with plants that screen the soundwall, preferably with either native vegetation or landscaping that complements the dominant landscaping of surrounding areas.

4.3.6 **Residual Impacts**

The mitigation measure listed above would be expected to reduce potentially significant visual impacts for most projects to a less than significant level when incorporated by project proponents. There may be some projects at particularly sensitive locations where these measures would not reduce impacts to below a level of significance.

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4.4 TRANSPORTATION/CIRCULATION

4.4.1 Existing Conditions

Existing Regional Transportation System

The transportation system that currently serves the San Diego region provides for the movement of people and goods through an intermodal network of highways and roads, public transit, freight railroads, airports, seaports, and intermodal facilities. This transportation system provides the means for residents, employees, visitors, and goods to travel within the region. The transportation system supports the region's economic needs as well as the demand for personal travel. Current levels of service within the San Diego region are shown in Figure 4.4-1 (see end of Section 4.4).

Public transportation services are provided both for trips within the region and for trips between San Diego and adjacent areas. The current transit network includes approximately 92,000 transit miles for local public bus operations and light rail passenger service. Amtrak and private bus operators provide most interregional ground passenger travel. In addition, Metrolink provides interregional commuter rail service to Orange County and the Los Angeles basin.

Within the region, there are eight transit operators providing fixed-route transit services. These include the "Coaster" commuter rail service operating between San Diego and Oceanside, the San Diego Trolley, and several fixed-route bus systems. Ferry service also is available between San Diego and Coronado. In addition, there are demand-responsive transit services that provide transit service in sparsely traveled areas and for travelers with special needs that cannot be well served by fixed-route service.

Intermodal Service

Goods movement in the San Diego region is provided via truck travel on the region's roadway system as well as by air, rail, and seaport. Lindbergh Field serves as the primary airport for the movement of the goods transported by air. Freight rail service is provided via the BNSF and SDIV railroads. The region's seaports at Tenth Avenue in San Diego and National City are located on San Diego Bay and is operated by the San Diego Unified Port District.

Overall, in fiscal year 2001, the volume of maritime cargo increased by 4 percent over the previous year. Currently, approximately 2.5 million tons of cargo are handled annually. Inbound cargoes include refrigerated commodities, fertilizer, cement, break bulk commodities, and forest products such as newsprint. Main export cargoes include refrigerated cargo; break bulk; and bulk commodities such as soda ash, sodium sulfate, and borax. In the past 4 years, bulk tonnage has steadily increased from 157,000 to 744,000 metric tons annually.

The San Diego & Arizona Eastern (SD&AE) Railway connects San Diego to Tijuana and Tecate in Baja California. The SDIV Railroad provides freight service between San Diego and San Ysidro. In 2001, Carrizo Gorge Railway took over operations between Tijuana and Tecate. Main commodities moved include liquefied petroleum gas, lumber, beverages, paper, grain, and sand.

The extension of existing freight service between San Diego and Tecate to the Imperial Valley is being considered by rehabilitating the 70-mile Desert Line portion of the SD&AE, which has been out of service since 1983. In May 2002, MTDB granted a contract to Carrizo Gorge Railway to repair, operate, and maintain the Desert Line. The connection with the Union Pacific Railroad in Imperial Valley would link San Diego and its port to the rest of the United States and Mexico, and vastly improve the region's market opportunities.

Regulatory Framework

Federal Regulations

The Transportation Equity Act for the 21st Century (TEA-21), signed into law in 1998, provides the regulatory framework at the federal level for transportation planning in urban areas. Under TEA-21, the U.S. Department of Transportation (USDOT) requires that Metropolitan Planning Organizations, like SANDAG, prepare long-range transportation plans. In federally designated air quality nonattainment and maintenance areas, the long-range transportation plan is to be updated every three years. SANDAG adopted the 2020 RTP in April 2000. When adopted, the 2030 RTP will replace the 2020 RTP as the San Diego region's long-range transportation plan.

Key federal requirements for long-range transportation plans include the following:

- Plans must be developed through an open and inclusive process that ensures public input and seeks out and considers the needs of those traditionally under served by existing transportation systems.
- Plans must be developed for a period of not less than 20 years into the future and must reflect the most recent assumptions for population, travel, land use, congestion, employment, and economic activity.
- Plans must have a financially constrained element and transportation revenue assumptions must be reasonable.
- Plans must conform to the applicable State Implementation Plan (SIP) for air quality.
- Plans must consider seven planning factors and strategies in the local context: economic vitality, safety and security of the transportation system, accessibility/mobility, environment and quality of life, connectivity of the transportation system, efficiency, and preservation of the existing transportation system.

State Regulations

State regulations for the preparation of long-range transportation plans are similar to federal regulations. Key additional requirements of the state include the following:

- Plans must comply with CEQA.
- The first 4 years of the plan must be consistent with the 4-year State Transportation Improvement Program (STIP), as incorporated into the Regional Transportation Improvement Program (RTIP).
- Program level performance measures must establish objective criteria that reflect the goals and objectives of the plan used in the evaluation of the plan.
- Plans must include a policy element, an action element, and a financial element.

4.4.2 Significance Criteria

Based on CEQA Guidelines, a project would result in a significant environmental impact if it would cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system. In the context of this program level EIR, regional transportation impacts were evaluated based on roadway and public transit travel. The following significance criteria were used:

- percent of daily vehicle miles traveled (VMT) at level of service (LOS) E or F: This criterion is a measure of the amount of roadway travel that is made under congested travel conditions. It is considered to be the most concise measure of the ability of the roadway system to handle projected traffic loads.
- percent of work and higher education trips accessible in 30 minutes by transit: This criterion measures the ability of the transit system to provide access to employment and higher education opportunities. It is considered to be the most concise measure of the ability of the public transit system to provide service to travelers making trips to work and higher education destinations.
- percent of nonwork trips accessible in 15 minutes by transit: This criterion measures the ability of the transit system to provide access to locations other than employment and higher education opportunities. It is considered to be the most concise measure of the ability of the public transit system to provide service to travelers making nonwork trips.

Because the goal of the 2030 RTP is to optimize the performance of the roadway and public transit systems, a significant transportation impact would be considered to occur if any of the previously listed percentages were less favorable under 2030 conditions with the 2030 RTP in comparison to the 2030 No Project condition. Baseline transportation improvements considered under the No Project scenario are discussed in detail in Section 7.0, Alternatives Analysis. A significant impact would be considered to occur in any of the following cases:

- the percent of daily VMT at level of service E or F increased from the 2030 No Project condition to the 2030 RTP condition.
- the percent of work and higher education trips accessible in 30 minutes by transit decreased from the 2030 No Project condition to the 2030 RTP condition.

- the percent of nonwork trips accessible in 15 minutes by transit decreased from the 2030 No Project condition to the 2030 RTP condition.

4.4.3 Impact Analysis

Table 4.4-1 discloses the percent of daily VMT at LOS E or F and the percent of work/higher education trips accessible by transit in 15 or 30 minutes. The information is shown for current (year 2000) conditions as well as with implementation of the 2030 RTP and implementation of the No Project alternative.

**Table 4.4-1
Transportation Impact Analysis**

Criterion	Scenario Proposed		
	Year 2000 Existing Conditions	Year 2030 No Project	Year 2030 RTP Project
Percent of Daily VMT at LOS E or F	13%	20%	12%
Percent of work/higher education trips accessible in 30 minutes by transit	7%	7%	11%
Percent of work/higher education trips accessible in 15 minutes by transit	3%	2%	5%

Source: SANDAG 2002a

While there would be more people and cars in the future, implementation of the 2030 RTP would result in a less congested roadway system and a more accessible transit system than the No Project condition. Figure 4.4-2 (end of Section 4.4) shows future levels of service for the year 2030 with the proposed project. Comparing the roadway system under year 2030 levels of service with year 2002 levels of service, there would be certain segments operating at better levels than under existing conditions. This is true for major freeways such as I-5, between Del Mar and Oceanside which operate at LOS F during peak hours. With the proposed 2030 RTP transportation network including HOV improvements, these levels of service would improve (between LOS A to E).

4.4.4 Significance of Impact

At the program level, the 2030 RTP is considered to be beneficial in terms of its impact on the regional transportation system. Individual transportation improvement projects that are included in the 2030 RTP will be subject to more detailed environmental impact analysis. It is possible that individual transportation improvements included in the 2030 RTP would have traffic and transportation impacts on local streets and transportation systems. The detailed environmental analysis to be conducted at the project-specific level is the appropriate process for the analysis and mitigation of any identified transportation impacts.

4.4.5 Mitigation Measures

Because adoption and implementation of the 2030 RTP would not result in significant transportation related impacts, no mitigation is required.

4.4.6 Residual Impacts

At this program planning level, there would be no residual transportation/circulation impacts.





4.5 AIR QUALITY

4.5.1 Existing Conditions

Background

Significant progress has been realized in the region's air quality since the early 1970s when SANDAG and the San Diego County Air Pollution Control District (APCD) began working together to reduce regional transportation-related emissions. Control of motor vehicle emissions, a primary contributor to regional air pollution, has been a focus of federal and state air quality legislation. Consequently, legislation now includes requirements that transportation officials make a commitment to programs and projects that will help achieve national air quality goals. Recent attention has also been directed toward measures that reduce emissions from indirect sources of air pollution.

SANDAG is responsible for developing a "Transportation Control Measures (TCM) Plan" to help achieve air quality objectives for the region. The plan provides actions to reduce air pollution by increasing efficiency of the transportation system and motor vehicle use. Air quality improvement is achieved through implementation of policies and actions described in the 2030 RTP, such as traffic signal improvements, transit expansion, vanpools, HOV lanes, park-and-ride, bicycle facilities, and intelligent vehicle highway technologies. Measures may be found in the 2030 RTP as they relate to air quality planning and transportation conformity.

The APCD adopts the TCM Plan as part of the Regional Air Quality Strategy (RAQS) and is responsible for stationary source tactics that affect air pollution caused by industry. The RAQS is updated on a triennial basis and outlines measures for achieving state and national air quality standards.

Regulatory Framework

Federal Regulations

The federal Clean Air Act (CAA) of 1970, amended in 1977 and 1990 (42 U.S.C. 7506(c)), was enacted for the purposes of protecting and enhancing the quality of the nation's air resources to benefit public health, welfare, and productivity. In 1971, to achieve the purposes of Section 109 of the act, the Environmental Protection Agency (EPA) promulgated National Ambient Air Quality Standards (NAAQS). The NAAQS require that certain pollutants should not exceed

specified levels; areas that exceed the standard for specified pollutants are designated as "nonattainment areas." Six pollutants of primary concern were designated: ozone (O₃), carbon monoxide (CO), sulfur dioxide (SO₂), nitrogen dioxide (NO₂), lead (Pb), and suspended particulate matter (PM₁₀ - PM_{2.5}). In promulgating the NAAQS, the EPA allowed states the option to develop different (stricter) standards, which California adopted. Table 4.5-1 lists the federal and California state standards. Both sets of standards must be met in California.

If an air basin is not in attainment with federal standards for a particular pollutant, the basin is classified as marginal, moderate, serious, severe, or extreme. The federal Clean Air Act Amendments of 1990 (CAAA) require each state containing nonattainment areas to submit a State Implementation Plan (SIP) to the federal EPA. The SIP specifies measures to be taken to attain the NAAQS by a specified attainment deadline. California's 1994 Ozone SIP was approved by the EPA in February 1997. The San Diego Air Basin (SDAB) is in federal attainment for all criteria pollutants except ozone and is a maintenance area for carbon monoxide.

In 2001, San Diego met the 1-hour federal clean air standard for ozone but will officially retain the status "serious" nonattainment until the EPA determines that all statutory criteria for redesignation have been met. In June 2002, the APCD released a draft request for the EPA to redesignate San Diego to attainment/maintenance for ozone. San Diego still has not met the more restrictive state 1-hour ozone standard (2001 SDAPCD Annual Report).

The CAAA, the Intermodal Surface Transportation Efficiency Act of 1991, and the subsequent TEA-21 of 1998 signal the intent of Congress to promote major reforms in the transportation planning process. The conformity provisions of the CAAA require that transportation officials make a commitment to programs and projects that help achieve national air quality goals. Among the goals are providing for greater integration of the transportation and air quality planning processes; ensuring that transportation plans, programs, and projects conform to the "purpose" of the SIP for the attainment of the NAAQS; and reducing the growth in vehicle miles traveled and congestion in areas that have not attained the NAAQS. To conform to the San Diego portion of the SIP, the 2030 RTP and the RTIP must consider the most recent estimates of mobile source emissions and contribute to emissions reductions for areas designated nonattainment for ozone or carbon monoxide. In addition, transportation projects must come from a conforming transportation plan and program.

Table 4.5-1
Ambient Air Quality Standards

Ambient Air Quality Standards						
Pollutant	Averaging Time	California Standards ¹		Federal Standards ²		
		Concentration ³	Method ⁴	Primary ^{3,5}	Secondary ^{3,6}	Method ⁷
Ozone (O ₃)	1 Hour	0.09 ppm (180 µg/m ³)	Ultraviolet Photometry	0.12 ppm (235 µg/m ³) ^a	Same as Primary Standard	Ethylene Chemiluminescence
	8 Hour	—		0.08 ppm (157 µg/m ³)		
Respirable Particulate Matter (PM ₁₀)	Annual Geometric Mean	30 µg/m ³	Size Selective Inlet Sampler ARB Method P (8/22/85)	—	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	24 Hour	50 µg/m ³		150 µg/m ³		
	Annual Arithmetic Mean	—		50 µg/m ³		
Fine Particulate Matter (PM _{2.5})	24 Hour	No Separate State Standard		65 µg/m ³	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean			15 µg/m ³		
Carbon Monoxide (CO)	8 Hour	9.0 ppm (10 mg/m ³)	Non-dispersive Infrared Photometry (NDIR)	9 ppm (10 mg/m ³)	None	Non-dispersive Infrared Photometry (NDIR)
	1 Hour	20 ppm (23 mg/m ³)		35 ppm (40 mg/m ³)		
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m ³)		—		
Nitrogen Dioxide (NO ₂)	Annual Arithmetic Mean	—	Gas Phase Chemiluminescence	0.053 ppm (100 µg/m ³)	Same as Primary Standard	Gas Phase Chemiluminescence
	1 Hour	0.25 ppm (470 µg/m ³)		—		
Lead	30 days average	1.5 µg/m ³	AIHL Method 54 (12/74) Atomic Absorption	—	—	High Volume Sampler and Atomic Absorption
	Calendar Quarter	—		1.5 µg/m ³	Same as Primary Standard	
Sulfur Dioxide (SO ₂)	Annual Arithmetic Mean	—	Fluorescence	0.030 ppm (80 µg/m ³)	—	Pararosaniline
	24 Hour	0.04 ppm (105 µg/m ³)		0.14 ppm (365 µg/m ³)	—	
	3 Hour	—		—	0.5 ppm (1300 µg/m ³)	
	1 Hour	0.25 ppm (655 µg/m ³)		—	—	
Visibility Reducing Particles	8 Hour (10 am to 6 pm, PST)	In sufficient amount to produce an extinction coefficient of 0.23 per kilometer—visibility of ten miles or more (0.07—30 miles or more for Lake Tahoe) due to particles when the relative humidity is less than 70 percent. Method: ARB Method V (8/18/89).		No Federal Standards		
Sulfates	24 Hour	25 µg/m ³	Turbidimetric Barium Sulfate-AIHL Method 61 (2/76)			
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m ³)	Cadmium Hydroxide STRactan			

Source: California Air Resources Board 1999

Table 4.5-1 (Continued)

1. California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, suspended particulate matter - PM₁₀, and visibility reducing particles, are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

In addition, Section 70200.5 lists vinyl chloride (chloroethene) under "Ambient Air Quality Standards for Hazardous Substances." In 1978, the California Air Resources Board (ARB) adopted the vinyl chloride standard of 0.010 ppm (26 $\mu\text{g}/\text{m}^3$) averaged over a 24-hour period and measured by gas chromatography. The standard notes that vinyl chloride is a "known human and animal carcinogen" and that "low-level effects are undefined, but are potentially serious. Level is not a threshold level and does not necessarily protect against harm. Level specified is lowest level at which violation can be reliably detected by the method specified. Ambient concentrations at or above the standard constitute an endangerment to the health of the public."

In 1990, the ARB identified vinyl chloride as a Toxic Air Contaminant and determined that there was not sufficient available scientific evidence to support the identification of a threshold exposure level. This action allows the implementation of health-protective control measures at levels below the 0.010 ppm ambient concentration specified in the 1978 standard.

2. National standards (other than ozone, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The 8-hour ozone standard is attained when the fourth highest 8-hour concentration in a year, averaged over 3 years, is equal to or less than the standard. For PM₁₀, the 24-hour standard is attained when 99 percent of the daily concentrations, averaged over 3 years, are equal to or less than the standard. For PM_{2.5}, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over 3 years, are equal to or less than the standard. Contact U.S. EPA for further clarification and current federal policies.
3. Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 mm of mercury. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 mm of mercury (1,013.2 millibar); ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.
4. Any equivalent procedure that can be shown to the satisfaction of the ARB to give equivalent results at or near the level of the air quality standard may be used.
5. National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.
6. National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.
7. Reference method as described by the U.S. EPA. An "equivalent method" of measurement may be used but must have a "consistent relationship to the reference method" and must be approved by the U.S. EPA.
8. New federal 8-hour ozone and fine particulate matter standards were promulgated by U.S. EPA on July 18, 1997. The federal 1-hour ozone standard continues to apply in areas that violated the standard. Contact U.S. EPA for further clarification and current federal policies.

"Conformity" is a determination that transportation plans and programs in nonattainment areas meet the purpose of the SIP. The Metropolitan Planning Organization (in the San Diego region, SANDAG) and the USDOT make this determination. Conformity determinations for transportation plans, programs and projects are based on the USDOT/EPA conformity rule issued in November 1993. The EPA revised that rule in August 1995, November 1995, and August 1997.

As part of the consultation process with the California Air Resources Board (CARB) and the EPA to implement EPA's third set of Transportation Conformity rule amendments, published August 15, 1997, SANDAG's MOA with the APCD, CARB, Caltrans, FTA, and FHWA, was replaced by "The San Diego Transportation Conformity Procedures" (Procedures), approved by both SANDAG and the APCD. The Procedures contain the Federal Transportation Conformity Rule verbatim and locally developed Interagency Consultation Procedures. The EPA requested the change from an MOA to the Procedures to increase enforceability of the rule. The EPA believed the transportation conformity requirements had to be enforceable on entities not party to the MOA.

The Procedures were submitted to CARB for inclusion in the SIP. During the SIP review process, the decision on a suit filed by the Environmental Defense Fund against the EPA on the third set of revisions to the Federal Transportation Conformity Rule was issued by the U.S. Court of Appeals. The Court found against the EPA on all counts.

The EPA revised the NAAQS in 1997 to set new ozone and particulate matter standards, including a new standard for fine particulate matter (PM_{2.5} - particles 2.5 micrograms or smaller). The revisions were challenged in court, and on June 18, 1999, the U.S. Court of Appeals ruled the new PM_{2.5} standard should be retained. In early 2001, the U.S. Supreme Court upheld EPA's authority to establish the standard but ordered EPA to develop a new implementation policy. The Supreme Court deferred resolution of remaining legal challenges to the Court of Appeals. In early 2002, the Court of Appeals unanimously rejected all remaining legal challenges. Consequently, EPA can now proceed with developing federal requirements to implement the standard in the near future. (2001 SDAPCD Annual Report).

State Legislation

The 1982 SIP anticipated attaining federal ozone and carbon monoxide standards by 1987. However, these standards were not attained at that time. A lack of congressional action to reauthorize the federal CAA served as the impetus for the California Legislature to address the

state's continuing effort to improve air quality. In 1988, the California Clean Air Act (CCAA) was enacted requiring that the APCD prepare a revised RAQS for achieving the state and national air quality standards.

The state of California has set more stringent limits than the federal standards on the six pollutants of national concern (see Table 4.5-1). California has also established ambient standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility reducing particles.

Furthermore, the following RAQS and TCM Plan objectives are required by state law for the San Diego region:

- Reasonably available transportation control measures sufficient to substantially reduce the rate of increase in passenger vehicle trips and miles traveled per trip;
- Measures to achieve the use of a significant number of low-emission motor vehicles by operators of motor vehicle fleets (e.g., CARB's Low Emission Vehicles program); and
- Provisions to develop indirect source control programs.

California Clean Air Act

Amendments to the CCAA became effective on January 1, 1989. The act requires that air pollution control districts implement regulations to reduce emissions from mobile sources through the adoption and enforcement of transportation control measures. The CCAA also requires that air districts not meeting state air quality standards prepare local air plans to demonstrate strategies for attainment of those standards.

Requirements for "serious" areas also include implementing a permit program to achieve no net increase in emissions of nonattainment pollutants from all permitted new and modified stationary sources, and a requirement for best available retrofit control technology (BARCT) for existing stationary sources. Some of the measures required by the CCAA would reduce energy consumption as well as pollutant emissions.

State Implementation Plan (SIP)

The SIP sets forth the state's strategies for achieving air quality standards. The San Diego APCD is responsible for preparing and implementing the RAQS (that portion of the SIP applicable to

the SDAB). In San Diego, the Air Pollution Control Board, which governs the APCD, is comprised of the San Diego County Board of Supervisors. The San Diego APCD adopts rules, regulations, and programs to attain state and federal air quality standards and appropriates funds (including permit fees) to achieve these objectives.

To ensure that the SIP does not become outdated, the CCAA requires annual updates to the California Air Resources Board (CARB) reporting on the implementation schedule of the control measures. Every 3 years, the overall effectiveness of the RAQS must be assessed and submitted to the CARB in a report adopted at a public hearing (County of San Diego 1992).

Transportation Control Measures Plan

The San Diego APCD is the agency that regulates air quality in the SDAB. As part of the California SIP, the APCD has adopted the 1998 RAQS. Attached as part of the RAQS is the TCM Plan. Reasonably available control measures for transportation management included in the TCM Plan are defined as "any measure to reduce vehicle trips, vehicle use, vehicle miles traveled, vehicle idling, or traffic congestion" (County of San Diego 1992).

The specific actions included in the TCMs in the 1982 SIP have been fully implemented and continue to be funded. These tactics can be grouped into the following three major categories.

(D.) Transportation Capacity Expansion Tactics:

1. The *Transit Improvement and Expansion Program* includes the conversion of the current bus fleet to low emission vehicles, and 29 percent increase in bus service, and a 130 percent increase in rail service (from 1990 levels) to be accomplished by the year 2000.
2. The *Vanpool Program* includes the addition of 80 new vanpools, at a rate of 10 vanpools per year, by the year 2000.
3. The *High Occupancy Vehicle Lanes Tactic* includes the provision of HOV bypass lanes at metered ramps and implementation of additional HOV lanes as state and federal funding becomes available.
4. The *Park-and-Ride Facilities Tactic* includes strategies to encourage utilization of the existing park-and-ride facilities, as well as the development of 4,800 additional spaces, if state and federal funds are available.

5. The *Bicycle Facilities Tactic* includes the construction of 25 miles of bikeways per year and other actions to promote bicycle usage.

(E.) Transportation System Management Tactics

1. The *Traffic Flow Improvements Tactic* includes the coordination and optimization of traffic signals and computerized signal control to increase traffic flow and reduce emissions caused by motor vehicle stops and starts.

(F.) Indirect Source Control Tactics

1. The *Indirect Source Program* identifies land use and transportation actions and principles to deal with vehicle-related air pollution.

Area Description

The SDAB lies in the southwest corner of California and comprises all of the San Diego region. However, population and emissions are concentrated mainly in the western portion of the county. The air basin covers 4,260 square miles, includes about 8 percent of the state's population, and produces about 7 percent of the state's criteria pollutant emissions.

Topography and Climate

Topography

The topography in the San Diego region varies greatly, from beaches on the west to mountains and desert on the east. Much of the topography in between consists of mesa tops intersected by canyon areas. The topography of the region, along with the local meteorology, influences the dispersal and movement of pollutants in the basin. The mountains to the east prohibit dispersal of pollutants in that direction and help trap them in inversion layers, which will be discussed in the next section.

Regional Climate

The weather of the San Diego region, as in most of southern California, is profoundly influenced by the Pacific Ocean and its semipermanent high-pressure systems that result in dry, warm summers and mild, occasionally wet winters. The average minimum temperature for January ranges through the mid-40s to the high-50s over the county. July maximum temperatures average in the mid-80s to the high-90s. Most of the county's precipitation falls from November

to April, with infrequent (approximately 10 percent) precipitation during the summer. The average seasonal precipitation along the coast is approximately 10 inches; the amount increases with elevation as moist air is lifted over the mountains (University of California 1970).

The interaction of ocean, land, and the Pacific High Pressure Zone maintains clear skies for much of the year and drives the prevailing winds. Local terrain is often the dominant factor inland, and winds in inland mountainous areas tend to blow up the valleys during the day and down the hills and valleys at night.

In conjunction with the two characteristic onshore/offshore wind patterns, there are two types of temperature inversions (reversals of the normal decrease of temperature with height), which occur within the region that affect atmospheric dispersive capability and that act to degrade local air quality. In the summer, an inversion at about 1,100 to 2,500 feet is formed over the entire coastal plain when the warm air mass over land is undercut by a shallow layer of cool marine air flowing onshore. The prevailing sunny days in this region further exacerbate the smog problem by inducing additional adverse photochemical reactions. During the winter, a nightly shallow inversion layer (usually at about 800 feet) forms between the cooled air at the ground and the warmer air above, which can trap vehicular pollutants. The days of highest carbon monoxide concentrations occur during the winter months.

The predominant onshore/offshore wind pattern is sometimes interrupted by so-called Santa Ana conditions, when high pressure over the Nevada-Utah area overcomes the prevailing westerlies, sending strong, steady, hot, and dry winds from the east over the mountains and out to sea. Strong Santa Anas tend to blow pollutants out over the ocean, producing clear days. However, at the onset or breakdown of these conditions or if the Santa Ana is weak, prevailing northwesterly winds reassert themselves and send a cloud of contamination from the Los Angeles Basin ashore in the SDAB. A County of San Diego report notes that about 40 percent of the state smog standard violations, 75 percent of the federal standard violations, and all the highest alert level concentrations are caused by transport (County of San Diego 1992a).

Regional Air Quality

Growth rates in the SDAB during the last 20 years were among the highest in the state's urban areas. The population increased 54 percent, from over 1.9 million in 1981 to over 2.8 million in 2000. During this same time period, the number of vehicle miles traveled each day increased over 100 percent, from about 35 million miles per day in 1981 to nearly 74 million miles per day

in 2000 (ARB 2002). As in other parts of California, overall air quality in the SDAB has improved, despite high growth rates, indicating the benefits of cleaner technologies.

Emissions of oxides of nitrogen, reactive organic gases (ROG), PM₁₀, and carbon monoxide in the SDAB have been following the statewide trends since 1975. These trends are largely due to motor vehicle controls and reductions in evaporative emissions. Mobile sources (both on-road and other) are by far the largest contributors to oxides of nitrogen, ROG, and carbon monoxide emissions in the SDAB. The majority of the PM₁₀ emissions are from areawide sources (ARB 2002). Air quality in the SDAB is impacted not only by local emissions, but also by pollutants transported from other areas, in particular, ozone and ozone precursor emissions transported from the South Coast Air Basin and Mexico. Although the impact of transport is particularly important on days with high ozone concentrations, transported pollutants and emissions cannot be blamed entirely for the ozone problem in the San Diego area. Studies show that emissions from the SDAB are sufficient, on their own, to cause ozone violations.

Improvements from the transportation sector are primarily the result of advances in technology. The elimination of lead in gasoline, lower fuel volatility, and the advancement of emissions control systems have resulted in major reductions in emissions of lead, reactive hydrocarbons, carbon monoxide, and oxides of nitrogen. The Cleaner-Burning Gasoline sold in California starting in the spring of 1996 reduces hydrocarbons by 17 percent, carbon monoxide by 11 percent, and oxides of nitrogen by 11 percent relative to 1994 "conventional" gasoline. The enhanced vehicle inspection and maintenance program (Smog Check II) implemented in 1998 provides additional emission reductions.

Progress has been made in the region in attaining federal and state air quality standards. Federal and state standards have been met for lead, nitrogen dioxide, sulfur dioxide, and carbon monoxide, and federal standards are being met for inhalable particulates.

Air quality is commonly expressed as the number of days that air pollution levels exceed state standards set by the CARB or federal standards set by the EPA (see Table 4.5-1). The concentrations of pollutants within the SDAB are measured at the 11 monitoring stations maintained by the APCD and the CARB. The locations of monitoring stations in the San Diego region are shown in Figure 4.5-1. The Union Street station only monitors carbon monoxide and the Del Mar station only monitors ozone.

Air quality at a particular location is a function of the type and amount of pollutants being emitted into the air locally and throughout the basin and of the dispersal rates of pollutants within

the region. The major factors affecting pollutant dispersion are wind speed and direction, inversion layers (which affect vertical dispersion), and the local topography.

Carbon Monoxide

Improvements from the transportation sector, primarily resulting from advances in technology such as emissions control systems, have resulted in major reductions in CO emissions in the San Diego Air Basin, following the statewide trend of declining from 1985 to 2010 (Table 4.5-2). Cleaner-burning gasoline sold in California starting in the spring of 1996 has reduced carbon monoxide emissions by an estimated 11 percent relative to 1994 "conventional" gasoline. The enhanced vehicle inspection and maintenance program (Smog Check II) implemented in 1998 provides additional emission reductions. Consequently, after 3 years of no violations, the SDAB was reclassified as an attainment area for carbon monoxide. The EPA approved the Carbon Monoxide Maintenance Plan in 1998.

Ozone and Hydrocarbons

Both the peak indicator and the number of days above the state and federal ozone standards have decreased over the last 20 years as shown in Table 4.5-3. The peak 1-hour ozone indicator shows an overall decline of 42 percent from 1981 to 2000. The number of state and federal 1-hour standard exceedance days has dropped even more. There were 192 state standard exceedance days during 1981 and 24 state standard exceedance days during 2000. This represents a decrease of about 88 percent. During 1981, there were 78 federal 1-hour standard exceedance days. There were no federal 1-hour standard exceedance days during 1999 or 2000. However, there were 16 federal 8-hour standard exceedance days. It is clear that additional local emission controls would be needed to reach attainment of the ozone standards in the San Diego region. However, because of transport, future air quality in this area would also be affected by emission controls and growth in the South Coast Air Basin and, to some extent, Mexico.

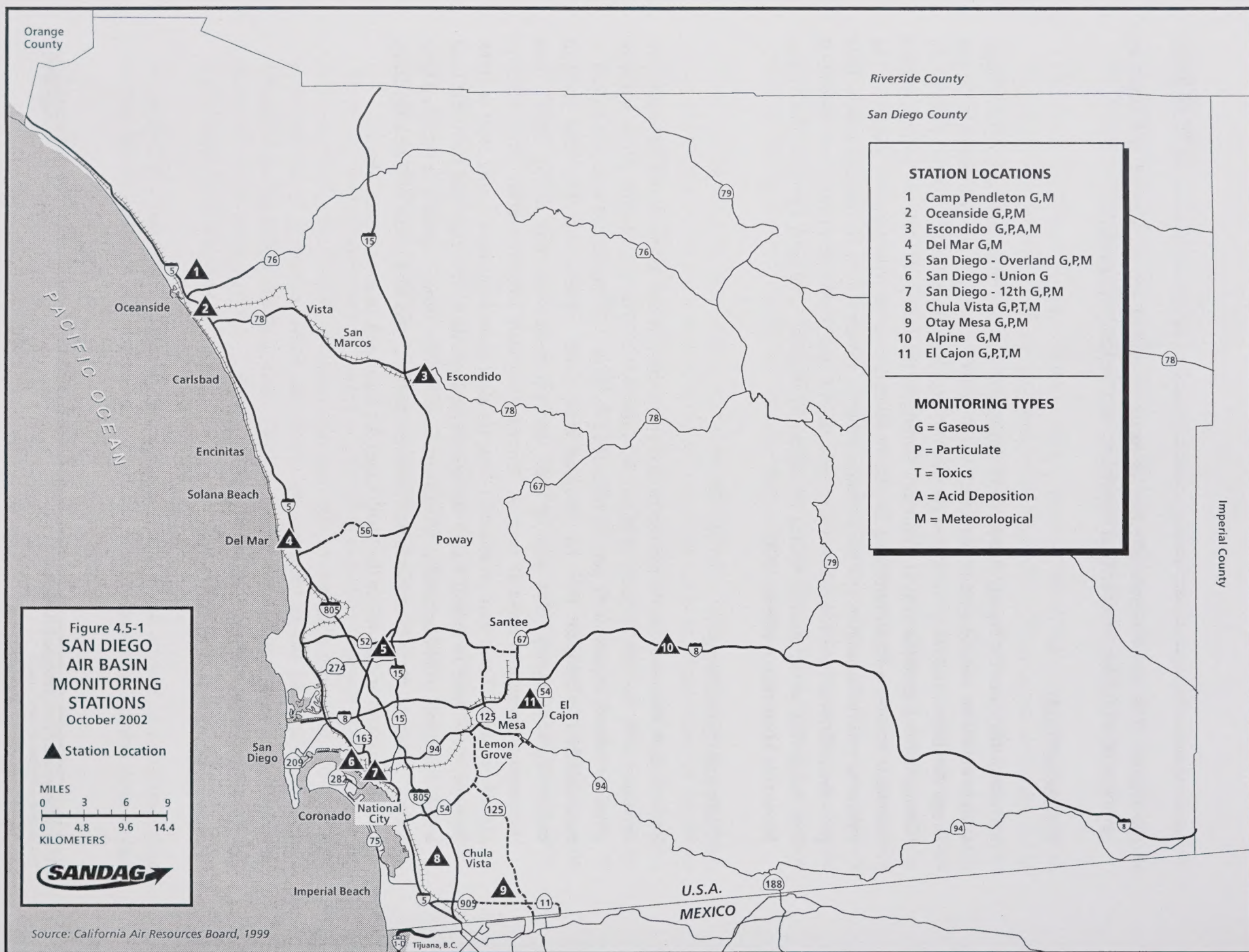


Table 4.5-2
CO Emission Trends for SDAB (tons/day, annual average)

Emission Source	1975	1980	1985	1990	1995	2000	2005	2010
<i>All Sources</i>	<i>3076</i>	<i>2956</i>	<i>2861</i>	<i>2468</i>	<i>1809</i>	<i>1382</i>	<i>1020</i>	<i>799</i>
Stationary Sources	20	21	21	25	25	40	37	39
Areawide Sources	48	50	56	60	64	67	74	80
On-Road Mobile	2866	2704	2567	2123	1473	1048	692	472
Gasoline Vehicles	2863	2699	2557	2109	1461	1038	682	465
Diesel Vehicles	3	5	10	14	12	10	9	8
Other Mobile	142	181	217	260	248	227	217	208

Source: CARB Almanac 2002

On-road motor vehicle emissions account for approximately 60 percent of smog (ROG + NO_x/1996) in the San Diego region. ROG emissions have been decreasing overall since 1980. These decreases are mostly due to decreased emissions from motor vehicles, brought about by stricter motor vehicle emission standards. Stationary and areawide source emissions of ROG have remained mostly unchanged over the last 20 years, with stricter emission standards offsetting industrial and population growth (Table 4.5-4).

Table 4.5-3
NO_x Emission Trends for SDAB (tons/day, annual average)

Emission Source	1975	1980	1985	1990	1995	2000	2005	2010
<i>All Sources</i>	<i>275</i>	<i>278</i>	<i>289</i>	<i>321</i>	<i>276</i>	<i>235</i>	<i>191</i>	<i>154</i>
Stationary Sources	46	31	17	21	19	17	16	18
Areawide Sources	2	2	2	3	3	3	3	4
On-Road Mobile	170	176	198	216	187	149	109	77
Gasoline Vehicles	160	158	162	162	139	103	65	44
Diesel Vehicles	10	18	35	54	47	46	44	33
Other Mobile	57	69	73	81	68	66	62	55

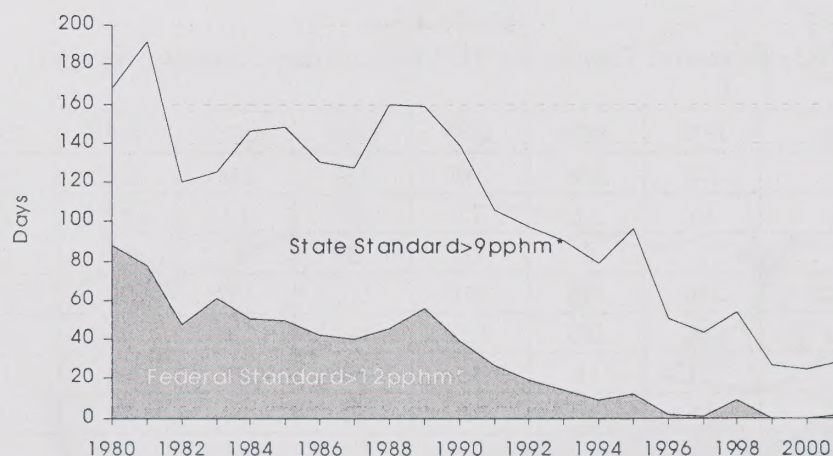
Source: CARB Almanac 2002

Table 4.5-4
ROG Emission Trends for SDAB (tons/day, annual average)

Emission Source	1975	1980	1985	1990	1995	2000	2005	2010
<i>All Sources</i>	<i>412</i>	<i>420</i>	<i>391</i>	<i>332</i>	<i>275</i>	<i>226</i>	<i>195</i>	<i>182</i>
Stationary Sources	26	47	46	46	46	44	57	67
Areawide Sources	36	42	44	47	42	43	43	46
On-Road Mobile	327	303	267	200	146	103	70	48
Gasoline Vehicles	326	302	265	197	144	101	68	47
Diesel Vehicles	1	1	2	3	3	2	2	2
Other Mobile	24	28	33	38	41	36	25	21

Source: CARB Almanac 2002

For ozone, the region exceeded the federal standard on 2 days in 2001, compared with 12 days in 1995 and 87 days in 1980. No violations of the federal ozone standard were recorded in the SDAB in 1999 and 2000. The region exceeded the more stringent state standards on 29 days in 2001, compared with 96 days in 1995 and 167 days in 1980. Days exceeding the state and federal ozone standards are shown in Figure 4.5-2.



* Parts per hour/million

Source: SANDAG 2002a

Figure 4.5-2. Days Exceeding Ozone Clean Air Standard - San Diego Air Basin

The federal 1-hour ozone standard is attained when each monitoring site in the region has no more than 3 days in a 3-year period with a maximum hourly average concentration exceeding the standard. During the 3-year period 1999-2001, three monitors in the San Diego region each had only one exceedance, and the other seven monitors had none. Thus the standard has now been attained and the APCD anticipates submitting a request for redesignation later this year. San Diego still has not met the more restrictive state 1-hour ozone standard.

Particulates

This standard measures particulates (PM₁₀) in the respirable range (10 microns or less) and is reported as a 24-hour average and as an annual measure. Direct emissions of PM₁₀ are doubling in the SDAB between 1975 and 2010 (as shown in Table 4.5-5). This increase is due to growth in emissions from areawide sources, primarily fugitive dust from vehicle travel on unpaved and paved roads, dust from construction and demolition operations, and particulates from residential fuel combustion (including wood). The growth in these areawide sources is primarily due to population growth and increases in VMT. Particulates are measured at the Chula Vista, El Cajon, Kearny Mesa, Escondido, Downtown San Diego, and Otay Mesa monitoring stations. The basin overall is currently in attainment of the federal standards but has not met the more stringent state standard.

Table 4.5-5
PM₁₀ Emission Trends for SDAB (tons/day, annual average)

Emission Source	1975	1980	1985	1990	1995	2000	2005	2010
<i>All Sources</i>	<i>71</i>	<i>84</i>	<i>90</i>	<i>113</i>	<i>112</i>	<i>120</i>	<i>131</i>	<i>140</i>
Stationary Sources	17	12	5	7	8	8	6	7
Area-wide Sources	45	63	74	92	92	101	113	122
On-Road Mobile	3	3	4	5	5	5	5	5
Gasoline Vehicles	2	2	2	3	3	3	4	4
Diesel Vehicles	1	1	2	3	2	1	1	1
Other Mobile	6	7	7	8	7	7	7	6

Source: CARB Almanac 2002

Nitrogen Dioxide and Sulfur Dioxide

NO_x (and nitrogen dioxide) emissions in the SDAB follow the statewide trend of declining from 1990 to 2010 (Table 4.5-6). In the past, the SDAB had a nitrogen dioxide problem. Maximum 1-hour concentrations during the 1980s occasionally exceeded the ambient air quality standards. However, ambient concentrations are now well below the levels of both the state and national standards. Data show that the maximum peak 1-hour indicator decreased 52 percent from 1981 to 2000, and the SDAB is in attainment for the nitrogen dioxide standards.

Table 4.5-6
NO_x Emission Trends for SDAB (tons/day, annual average)

Emission Source	1975	1980	1985	1990	1995	2000	2005	2010
<i>All Sources</i>	275	278	289	321	276	235	191	154
Stationary Sources	46	31	17	21	19	17	16	18
Area-wide Sources	2	2	2	3	3	3	3	4
On-Road Mobile	170	176	198	216	187	149	109	77
Gasoline Vehicles	160	158	162	162	139	103	65	44
Diesel Vehicles	10	18	35	54	47	46	44	33
Other Mobile	57	69	73	81	68	66	62	55

Source: CARB Almanac 2002

Because NO_x emissions contribute to ozone, as well as to nitrogen dioxide, many of the ozone control measures help reduce ambient NO₂ concentrations. Furthermore, NO_x emission controls are a critical part of the ozone control strategy and are not expected to be relaxed in the future.

The low level of sulfur dioxide (SO₂) in the basin could be attributed to use of low-sulfur fuels in the region's electrical generators, a primary source of this pollutant in other areas of the country.

Lead

The SDAB is presently an attainment area for lead. San Diego no longer monitors for lead because the use of unleaded gasoline has lowered lead levels to well below air quality standards.

In summary, based on data from the regional air quality monitoring network, the CARB has classified the air basin as a nonattainment area with respect to the state standards for ozone and PM₁₀.

4.5.2 Significance Criteria

Significant impacts to air quality would occur if the 2030 RTP would:

- conflict with or obstruct implementation of the applicable Air Quality Attainment Plan.

4.5.3 Impact Analysis

To avoid significant impacts on air quality, the 2030 RTP must conform to the purpose of the SIP for the attainment of the NAAQS and state air quality standards. This can be achieved if the 2030 RTP includes air quality planning committed to attaining the federal and state air quality goals. Among these goals are (1) providing for greater integration of the transportation and air quality planning processes; (2) ensuring that transportation plans, programs, and projects conform with the SIP and contribute to attainment of the NAAQS; and (3) reducing the growth in VMT and congestion in areas that have not attained the NAAQS.

The 2030 RTP includes the following sustainability goals which ensure conformance with the RAQS, SIP, and TCM plan:

- implement the Regional Air Quality Strategy (RAQS) with the assistance of SANDAG where appropriate.
- ensure that plans contribute to the implementation of the RAQS and conform to the current SIP.
- review and update the TCM for Air Quality for consistency with changing goals and policies. Any revisions to the TCM Plan would be submitted to the APCD for inclusion in mandated updates of the RAQS and the SIP.
- encourage local jurisdictions to implement smart growth strategies and the APCD's Air Quality/Land Use Guidelines.

- comment on EIRs, encouraging measures to reduce motor vehicle emissions in development and redevelopment projects.
- continue to implement the air quality/transportation planning consultation process, in accordance with applicable federal guidelines.

Overall, the proposed 2030 RTP would benefit the region's air quality by helping to relieve traffic congestion and by encouraging the use of more efficient transportation methods. The future smart growth land use pattern assumed under the 2030 RTP would support a mixed-use development facilitating alternative modes of transportation such as walking or bicycling. The mixed-use concept and concentrated urban nodes could reduce average trip distances and encourage transit use. The 2030 RTP does not directly affect land use policies, which are the province of local land use jurisdictions such as cities and the county, but the policies include encouraging local jurisdictions to implement land use policies and actions of the 2030 RTP such as funding incentives that promote smart growth policies favorable to more efficient travel and reduced congestion.

The 2030 RTP, by including policies and actions that conform to air quality planning by the APCD and other agencies, provides for the integration of the transportation and air quality planning processes. Policies and actions specifically require conformance of the transportation plans and programs with the SIP, RAQS, and TCM Plan, and encourage the conformance of individual projects through the environmental review process. The application of advanced transportation and vehicle technologies and specific measures adopted in the TCM Plan are designed to reduce the growth in vehicle miles traveled and congestion.

4.5.4 Significance of Impacts

Actions and policies considered in the 2030 RTP are intended to reduce congestion and would create a more efficient transportation network. The 2030 RTP would contribute positively to the purpose of the SIP for the attainment of the RAQS. This in turn would have an overall positive impact on regional air quality and would not result in significant adverse impacts to regional air quality.

4.5.5 Mitigation Measure

No mitigation is required because there would not be significant impacts to air quality.

4.5.6 Residual Impacts

No residual air quality impacts are expected to occur.

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4.6 NOISE

4.6.1 Existing Conditions

Definitions of Acoustical Terms

Noise can be defined as unwanted sound. Whether a sound is undesirable is often dependent on the receiver's activity and the time of day. The same noise may be more annoying when a person is reading or studying than when he or she is watching television or doing something else that generates noise. Likewise, a siren in the middle of the night would usually be more annoying than one heard during the day. Excessively high noise levels can cause physical injury and adverse psychological effects.

Noise is commonly described in terms of decibels (dB). A decibel is 10 times the logarithm of the ratio of a sound pressure squared to the reference sound pressure squared. The reference sound pressure is the smallest sound pressure audible to humans. The healthy human hearing system can hear an extremely wide range of sound pressures. For example, a diesel truck will have a sound pressure one billion times greater than a cricket song (FHWA 1973). By using logarithms, the decibel system condenses this wide range to one which is more convenient, covering 0 decibels (threshold of hearing) to 140 decibels (threshold of pain) (Harris 1991).

A-weighted sound pressure levels in decibels (dBA) are the most commonly used units of measure for community noise studies. A-weighted sound pressure levels represent an approximation of the frequency response of a healthy human hearing system. A-weighting takes into account the fact that humans are more sensitive to higher frequency sounds than lower frequency sounds.

Many different descriptors have been developed to evaluate community response to noise. The most widely used descriptors today are the average noise level (L_{eq}), the Community Noise Equivalent Level (CNEL), and the day/night average noise level (L_{dn}). The L_{eq} is the noise level equivalent to the actual time-varying noise level occurring over a specified period of time (usually 1 hour). The CNEL is a 24-hour measure of community noise exposure. The CNEL is an average of the L_{eq} that occur during a 24-hour period. However, when determining the 24-hour average, 5 dBA are added to the evening (7:00 p.m. to 10:00 p.m.) noise level averages and 10 dBA are added to the nighttime (10:00 p.m. to 7:00 a.m.) noise level averages to account for added sensitivity to noise during these times. The L_{dn} is similar to the CNEL, except that the evening hours are not weighted.

Ambient Levels and Existing Noise Sources

The ambient noise level is the all-encompassing noise associated with a given environment at a specified time. It is the composite of sound from many sources in all directions, near and far, with no particular sound being dominant (Harris 1991:2.2). Typical ambient levels range from 35 to 50 CNEL in rural and agricultural areas, 50 to 65 CNEL in suburban to urban areas, and 65 to 75 CNEL in downtown urban areas (EPA 1974).

The most prevalent noise generators in the San Diego region are vehicular and aircraft (including helicopter) traffic. Railroads and stationary industrial and commercial sources also contribute to the noise environment. Local collector streets are not considered to be a significant source of noise since traffic volume and speed are generally much lower than for freeways and arterial roadways.

Regulatory Framework

Federal, state, and local governments all have roles in the regulation of noise. The federal government establishes noise criteria for interstate highways. Caltrans also uses these criteria for state routes. In California, the state establishes noise emission limits for individual vehicles. The state also promulgates interior noise standards in the Uniform Building Code (Title 24). Local governments have noise ordinances in their municipal codes to regulate stationary sources of noise and guidelines in their general plans to determine the impacts of transportation noise on different types of land uses.

The standards used by Caltrans for transportation noise to exterior areas are presented in Table 4.6-1. For planning around other types of transportation noise sources such as roadways and light-rail transit, the city and county of San Diego use typical guidelines shown in Table 4.6-2. The county has an exterior noise level standard of 60 CNEL for noise-sensitive areas, defined as residences, hospitals, schools, libraries, and other facilities where quiet is an important environmental attribute. The more urbanized city of San Diego has an exterior noise level standard of 65 CNEL for noise-sensitive uses. Other cities in the region have transportation noise level standards similar to those of the city or county. These standards are designed to protect sensitive land uses from high noise levels and to be used as guidelines in siting land uses.

**Table 4.6-1
Caltrans Noise Abatement Criteria**

Activity Category	Hourly Activity Description	L_{eq} (dBA)
A	Lands on which serenity and quiet are of significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.	57 (exterior)
B	Picnic areas, recreation areas, playgrounds, active sports areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals.	67 (exterior)
C	Developed lands, properties, or activities not included in Categories A or B above.	72 (exterior)
D	Undeveloped lands.	No criterion
E	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums.	52 (interior)

Note: These criteria were developed by the Federal Highway Administration in the Federal Air Highway Program Manual, Transmittal 348, August 9, 1982.

The State Uniform Building Code (Title 24, Noise Insulation Standards) establishes interior noise levels of 45 CNEL for new hotels, motels, and multi-family residences due to exterior transportation sources. Many jurisdictions in the San Diego region extend this 45 CNEL interior limit to single-family residences.

Traffic Noise

The traffic noise generated on a roadway is dependent on traffic speed, volume, and percentage of trucks. In general, the larger the traffic volume is on a roadway, the higher the noise levels that are generated on that roadway. This holds true until there is so much traffic that flow degrades and speeds decrease, which lowers noise levels. Roadways with large percentages of heavy trucks will generate higher noise levels. A heavy truck traveling 50 miles per hour (mph) generates about 85 dBA, whereas a car traveling the same speed generates only 71 dBA. An increase of 10 dBA is usually perceived as a "doubling" of sound (FHWA 1973).

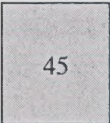
The roadways which generate the highest noise levels in the region are the interstate and state highways because they have the highest speed limits, the largest traffic volumes, and the most trucks. Refer to Figure 2-6, Regional Arterial System, which shows the interstate and state highway network

Table 4.6-2
Noise/Land Use Compatibility Matrix

Land Use	Annual Community Noise Equivalent Level (CNEL) in Decibels				
	55	60	65	70	75
1. Outdoor amphitheaters					
2. Nature preserves, wildlife preserves, livestock farming; neighborhood and playgrounds					
3. Schools, preschools, libraries		45			
4. Residential-single family and multiple family, mobile homes, residential hotels, retirement homes, intermediate care facilities, hospitals, nursing homes		45			
5. Hotels and motels, other transient lodging; auditoriums, concert halls, indoor arenas, churches		45	45		
6. Office buildings-business, educational, professional and personal services; R&D offices and laboratories			50		
7. Riding stables, water recreation facilities, regional parks and athletic fields, cemeteries; outdoor spectator sports, golf courses					
8. Commercial-retail; shopping centers, restaurants, movie theaters			50	50	
9. Commercial-wholesale; industrial; manufacturing					
10. Agriculture (except residences and livestock), extractive industry, fishing, utilities, and public R-O-W					

 **Compatible** - The outdoor community noise equivalent level is sufficiently attenuated by conventional construction that the indoor noise level is acceptable, and both indoor and outdoor activities associated with the land use may be carried out with essentially no interference from aircraft noise.

45

 **Conditionally Compatible** - The outdoor community noise equivalent level will be attenuated to the indoor level shown, and the outdoor noise level is acceptable for associated outdoor activities.

 **Incompatible** - The community noise equivalent level is severe. Although extensive mitigation techniques could make the indoor environment acceptable for performance of activities the outdoor environment would be intolerable for outdoor activities associated with the land use.

Source: SANDAG 2000

and significant arterials in the San Diego region. Highways typically generate 70-80 CNEL at a receptor adjacent to the highway. Heavily used commuter roadways, such as arterials and major streets, also generate significant levels of noise, typically 65-75 CNEL at an adjacent receptor. In San Diego, there is a wide range of land uses located adjacent to highways and major streets, including residences, schools, churches, hospitals, shopping centers, industrial parks, agriculture, parks, and open space.

Railroad Operations

The two basic types of railroad operations are freight trains, and passenger rail operations, the latter consisting of commuter and intercity passenger trains and steel-wheel urban rail transit. Generally, freight operations occur at all hours of the day and night while passenger rail operations are concentrated within the daytime and evening periods.

Trains can generate high, relatively brief, intermittent noise events. Train noise is an environmental concern for sensitive uses located along rail lines and in the vicinities of switching yards. Locomotive engines and the interaction of steel wheels and rails generate primary rail noise. The latter source creates three types of noise: 1) rolling noise due to continuous rolling contact; 2) impact noise when a wheel encounters a rail joint, turnout or crossover; and 3) squeal generated by friction on tight curves. For very high-speed rail vehicles, air turbulence can be a significant source of noise. Train air horns and crossing bell gates contribute to loud noise levels near grade crossings (U.S. DOT 1995).

Construction Noise Sources

Construction can be another significant, although typically short-term, source of noise. Construction is most significant when it takes place near sensitive land uses, occurs at night, or in early morning hours. As discussed above, local governments typically regulate noise associated with construction equipment and activities through enforcement of noise ordinance standards, implementation of general plan policies, and imposition of conditions of approval for building or grading permits. Table 4.6-3 shows typical exterior noise levels at various phases of commercial construction.

**Table 4.6-3
Typical Construction Phase Noise Levels**

Construction Phase	Noise Level (dBA, L_{eq}) ¹
Ground Clearing	84
Excavation	89
Foundations	78
Erection	85
Finishing	89

¹ Average noise levels 50 feet from the noisiest source and 200 feet from the rest of the equipment associated with a given construction phase. Noise levels correspond to commercial projects in a typical urban ambient noise environment.

Source: U.S. EPA 1971

4.6.2 Significance Criteria

The 2030 RTP would be considered a potentially significant impact if:

- it results in noise levels that approach or exceed the FHWA Noise Abatement Criteria or increase substantially above existing levels (a 3dB change would be considered noticeable);
- results in exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;
- results in the exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels.

4.6.3 Impact Analysis

Overall, the noise impacts of the transportation improvements described in the 2030 RTP could be either beneficial or adverse. Implementation of some of the transportation improvements could reduce the number of automobiles traveling on the county's roadway system, but also could increase the number of trucks, buses, and trains, which generate more noise per vehicle. Furthermore, decreasing congestion, a goal of the 2030 RTP, would allow vehicular traffic on freeways and major arterials to move faster, so that fewer vehicles using a corridor could increase the noise produced by traffic in that corridor. Development of mixed land uses or more intense residential land uses around

transit corridors specifically associated with rail activity, could expose more people to the higher levels of noise generated by high-volume transit corridors. New developments would need to conform to all applicable noise standards and regulations in their local jurisdiction, and mitigation for new development can be imposed through discretionary approvals. In addition, future land use planning near airport facilities and within airport influence areas should ensure the compatibility of new development with airport operations, and phase out incompatible uses to the extent possible.

Since noise is a highly localized impact, specific and detailed analyses are most appropriate at the project level. Therefore, the method to assess noise impacts of the 2030 RTP is to review the list of proposed transportation improvements and assess the likelihood of potentially significant noise impacts based on the type of project, location, and general land uses surrounding the project. Proposed highway and freeway improvements as identified in the 2030 RTP are shown in Table 4.6-4. As identified in the table, planned highway improvements would significantly impact the local noise environment if sensitive receivers are located nearby. Each individual highway project would require its own noise study as part of the environmental assessment and review process. These noise studies would determine specific areas of noise impact and would recommend mitigation measures to reduce noise levels in accordance with Caltrans Traffic Noise Analysis Protocol.

Table 4.6-4 also identifies improvements to existing freeways to improve peak hour traffic flow. These improvements include construction of auxiliary lanes, freeway widening to accommodate high-occupancy vehicles and buses (HOV lanes), interchange improvements, and ramp metering. These changes to the existing freeway system could increase noise levels at adjacent sensitive receivers by creating new lanes closer to the receivers or by allowing faster traffic speeds. As with new freeways, each individual highway project would require environmental assessment and review at the time it is proposed so that specific impacts could be determined.

The construction of HOV lanes and the maintenance and creation of park-and-ride facilities would encourage carpooling and would reduce the number of vehicle trips per person on the freeways. It is unlikely, however, that these improvements would reduce noise levels from major highways; traffic volumes would need to decrease by 50 percent to achieve a 3 dB reduction in noise levels.

**Table 4.6-4
2030 RTP Projects Relative to Potential Noise Impacts**

Major Route Improvements	Proposed Improvement	Potential Long-Term Noise Impact
Interstate Freeway		
I-5, from San Ysidro to Sorrento Valley	Lane widening for HOV improvements	Lane widening would potentially increase noise levels at adjacent sensitive receptors, including residential and recreational users.
I-5, Sorrento Valley/Carmel Valley Area north to SR 78	I-5/I-805 Merge project under construction, addition of additional HOV lanes and six-lane outer separation for trucks and traffic routed for SR 56.	Potential increase in noise levels would impact sensitive noise receptors, including recreational users.
I-8/East County	Highway widening from SR 125 to Los Coches Avenue, near Lakeside	Lane widening would potentially increase noise levels at adjacent sensitive receptors.
I-15 Riverside Connection	HOV lane addition	Lane widening would potentially increase noise levels at adjacent sensitive receptors.
I-15 Managed Lanes	Addition of four new managed lanes from SR 56 to Centre City Parkway in Escondido. Includes a series of operational improvements such as I-15/SR 56 interchange reconstruction and new auxiliary lanes at various locations.	New managed lanes would potentially increase noise levels at adjacent sensitive receptors, including residential and recreational users along corridor.
I-15 Urban Corridor	Widening from 32 nd Street to SR 163 to 8 lanes, plus 2 HOV lanes from I-805 to SR 163.	Lane widening would potentially increase noise levels at adjacent sensitive receptors.
I-805	New managed lanes from SR 905 in the South Bay to I-5 in Sorrento Valley. Widening of Mission Valley corridor from 8 lanes to 12 lanes.	Lane widening and new managed lanes would potentially increase noise levels at adjacent sensitive receptors.
State Highway		
SR 11	Planned 4-lane freeway from planned SR 905/SR 125 interchange to new federal port of entry. Includes truck access route.	New freeway would potentially increase ambient noise levels and potentially impact nearby sensitive noise receptors.

Table 4.6-4. Continued

Major Route Improvements	Proposed Improvement	Potential Long-Term Noise Impact
SR 52 East	Widening by 2 mixed flow lanes from I-5 to I-805. Widening from I-805 to I-15 would include 2 mixed flow and 2 HOV lanes. Addition of 2 reversible lanes from I-15 to SR 125. HOV connectors at I-805.	Lane widening would potentially increase noise levels at adjacent sensitive receptors.
SR 52 South Inner Loop	Proposed 4-lane freeway from SR 125 east to SR 67. Alignment extends primarily within City of Santee.	New highway would potentially increase ambient noise levels and potentially impact nearby sensitive noise receptors.
SR 54 - SR 125 (South Inner Loop)	South inner loop to be developed with 6-lanes and 2-HOV express lanes. Connects SR 94 in Lemon Grove with I-5 in the National City/Chula Vista area.	New highway would potentially increase ambient noise levels and potentially impact nearby sensitive noise receptors.
SR 56 (North San Diego City Area)	Proposed 9-mile, 6-lane freeway to connect I-5 and Carmel Valley with I-15. Initial 4-lane freeway to be widened to 8 lanes and 2 HOV lanes.	New freeway would potentially increase ambient noise levels and potentially impact nearby sensitive noise receptors.
SR 78	Widening of SR 78 from existing 6 lanes to 8 lanes.	Lane widening would potentially increase noise levels at adjacent sensitive receptors.
SR 125	Completion of the two remaining segments to close the gaps in SR 125 from Jamacha Road to SR 94 and from Navajo Road to Grossmont.	New freeway segments would potentially increase ambient noise levels and potentially impact nearby sensitive noise receptors.
SR 94/SR 125	Widening from 6 lanes to 8 lanes, plus 2 HOV lanes. Operational improvements planned at various interchanges.	Lane widening would potentially increase noise levels at adjacent sensitive receptors.
SR 94	Widening from SR 125 to Steel Canyon Road SR 125 to Avocado Boulevard widened from 4 to 6 freeway lanes; Avocado Boulevard to Jamacha Road from 4 conventional highway lanes to 6 freeway lanes; and Jamacha Road to Steele Canyon from 2 to 4 conventional highway lanes.	Lane widening would potentially increase noise levels at adjacent sensitive receptors.

Table 4.6-4. Continued

Major Route Improvements	Proposed Improvement	Potential Long-Term Noise Impact
SR 241 (Foothill Transportation Corridor South)	Planned Orange County toll road; segment extends within San Diego region, east of I-5. Alignment within Camp Pendleton.	New freeway would potentially increase ambient noise levels and potentially impact nearby sensitive noise receptors.
SR 905 (Extension to Otay Mesa Port of Entry)	Planned extension to the international border crossing, includes interchange improvements at Siempre Viva Road.	New extension of the freeway and interchanges would potentially increase ambient noise levels and potentially impact nearby sensitive noise receptors.
SR 67 (Mapleview to Dye Road)	Widening from a 2-lane conventional highway to a 4-lane conventional highway.	Lane widening would potentially increase noise levels at adjacent sensitive receptors.
SR 75/SR 282 Coronado Tunnel	Studies underway to potentially create tunnel from Alameda Boulevard to Glorietta Boulevard.	Noise would potentially be reduced through high traffic areas of Coronado if traffic is directed through tunnel.
SR 76 (East)	Upgrade of 2-lane conventional highway to 4 lanes. Extension connects to I-15.	Lane widening and new extension of the freeway would potentially increase ambient noise levels and potentially impact nearby sensitive noise receptors.
Regional Arterial Improvements	Widening and gap closure projects will be implemented at key regional arterial facilities. These will be evaluated on a regional basis based on their impact to enhance mobility.	New freeways, connectors, lane expansions and other regional projects would potentially increase ambient noise levels and potentially impact nearby sensitive noise receptors.
Tollway		
SR 125 (South)	SR 125 (south) to be developed as a toll facility between SR 905 and SR 54 San Miguel connector. Proposed 10.6-mile tollway, 4 lanes with 6 interchanges. Widening to 8 lanes north and 6 lanes south of Telegraph Canyon Road; possible HOV/transit lanes beyond 2020.	New highway would potentially increase ambient noise levels and potentially impact nearby sensitive noise receptors along the length of the roadway and near interchanges.

Source: SANDAG 2002a

Transit Impacts

The 2030 RTP includes major transit improvements designed to improve and expand services and increase ridership. The policies and actions which could affect the region's noise environment include expansion of the transit system to areas currently not being served, improved and increased service for the San Diego to Los Angeles rail corridor, opening of a San Diego to Oceanside commuter rail line, improvements to bus service in rural areas, increased frequency of bus service in current served areas, and construction of transit centers. Proposed transit improvements are shown in Table 4.6-5.

Expanded inter-city and commuter rail service is expected to reduce traffic on freeways and major arterials. These decreases in traffic volumes would not significantly decrease noise levels from the freeways, particularly if rail service is provided in the same corridor as the freeway. In addition, reductions in traffic volumes could lead to slight increases in noise as traffic speeds increase. None of these factors are expected to make major differences in noise volumes in heavily-traveled corridors, however, changes in vehicle traffic volumes in the neighborhood of 50 percent would be required to make a 3 dB difference in traffic noise.

Increases in public transit ridership could increase noise levels in rail corridors that experience more frequent train trips or in new rail corridors where there were previously no trains and where adjacent sensitive receivers are located. Rail crossings utilize audible warning signals that could impact nearby residents. Increases in rail traffic could also lead to more train horns or whistles at crossings near residential areas, which can be a source of annoyance, especially at night or in early morning or evening.

Alternate Modes/Intermodal Impacts

The promotion and increased use of bicycles as an alternative mode of transportation in San Diego, as recommended in the 2030 RTP, would not create noise impacts. The change in traffic volumes on major roadways due to an increase in bicycle trips would not be great enough to cause a significant decrease in noise levels.

Table 4.6-5
Proposed Transit Capital Improvements With Potential Noise Impacts

Transit facilities	Proposed Improvements	Potential Noise Impact
Mission Valley East Trolley Extension	Mission Valley East Extension is an extension of the San Diego Trolley light rail system from its current terminus in Mission Valley at Mission San Diego 5.9 miles to Grossmont Center. Stations include an underground station at San Diego State University. Opening is planned for 2005.	New trolley line would increase ambient noise at nearby sensitive receptors due to trolley operation including horn noise and crossing gate warnings.
Oceanside to Escondido Rail	Oceanside to Escondido Rail project is a 24-mile light rail line serving the Highway 78 corridor. Planned to open in 2005, this service will be a single-track system with 15 stations including Oceanside and Escondido Transit Centers, Palomar College and Cal State San Marcos. The 2030 RTP calls for double-tracking that line, increased service frequencies and an extension from the Escondido Transit Center to North County Fair.	A new rail line would increase ambient noise levels due to train operations and could impact nearby sensitive noise receptors.
Sorrento Mesa Transitway	Sorrento Mesa Transitway is a grade-separated transit-only facility in the Sorrento Mesa/University City area of San Diego.	The addition of a transit-only facility would not necessarily increase noise because the facility would be used by existing transit traffic.
Kearny Mesa Transitway	Kearny Mesa Transitway is a grade-separated transit-only facility along the I-15 corridor in Kearny Mesa.	The addition of a transit-only facility would not necessarily increase noise because the facility would be used by existing transit traffic.
Mid-Coast Light Rail	Mid-Coast Light Rail is an extension of the San Diego Trolley from the Old Town Transit Center, along I-5 to University City and along the Sorrento Mesa Transitway.	New trolley line would increase ambient noise at nearby sensitive receptors due to trolley operation including horn noise and crossing gate warnings.
Coastal Rail Double-Tracking	Coastal Rail double-tracking includes a number of doubletracking and related projects along the coastal rail line between Oceanside and downtown San Diego. These include siding projects, bridge replacements, safety improvements, and passenger enhancements planned to benefit the rail services using the coastal rail corridor (i.e. Coaster, Amtrak, potential High-Speed Rail, and freight).	Double tracking of the Coastal Rail line would raise noise levels due to increased train service traveling on the rail line.

Table 4.6-5. Continued

Transit facilities	Proposed Improvements	Potential Noise Impact
Coastal Rail Tunnels at University City and Del Mar	Coastal Rail Tunnels at University City and Del Mar would provide better reliability, safety, and travel time savings to the rail services using the coastal rail corridor.	New tunnels for Coastal Rail service would not increase noise levels but may decrease noise levels because it would be muffled by the tunnel.
Other Regional Rail Grade Separations	Other Regional Rail Grade Separations include a number of grade separations along the current Blue Line Trolley, between San Ysidro and downtown San Diego, and the Oceanside to Escondido Rail line. Exact locations are to be determined at a later date.	Grade separations would have the potential to either increase or decrease noise levels. This can only be determined after specific project design.
Improved/New Major Transit Stations and Centers	Improved/New Major Transit Stations and Centers are either improvements to existing or the construction of new transit centers for the high-end regional and corridor services proposed in MOBILITY 2030. These include design features like shelters, landscaping, and integration with the local community, advanced systems like real-time information, and pedestrian-friendly features. Additional parking is provided at a number of these stations.	New transit stations could increase noise in the local area due to increased transit vehicle traffic traveling to the new transit station and transit user trips to the transit station.
Direct Access Ramps to Managed/ HOV Lanes	Direct access ramps to Managed/HOV Lanes provide a direct connection for transit from the HOV or managed lanes on the freeway to the transit center.	Direct access ramps could increase ambient noise levels in the immediate area due to traffic on the new ramps.
Vehicles for New Regional Transit Services	Rail vehicles for new regional transit services could include a variety of different vehicles such as light and commuter rail vehicles, articulated bus, standard bus, or flextrolleys (a new generation of vehicles that have the flexibility of bus with the look and feel of rail).	Increased transit vehicles in operation could increase existing noise along transit routes due to typical noise generated by heavy buses and rail vehicles.
Arterial Transit Priority Improvements	Arterial Transit Priority Improvements enable transit to bypass traffic-choked areas on major arterials. These improvements can include signal priority, grade separated intersections, or queue jumper lanes. Exact locations along a given route are to be determined at a later date.	Improvements that enable transit to bypass traffic would not necessarily increase noise because the improvements would be used by existing transit traffic.

Source: SANDAG 2002a

The 2030 RTP includes actions that encourage more efficient intermodal transportation of goods. The number of freight trains currently operating each day in the San Diego region is dependent upon the demands of the industries using rail services and can vary greatly from day to day. Currently, BN&SF and the San Diego and Imperial Valley (SDIV) railroads transport rail freight in the San Diego region. Under an agreement made as a part of the purchase of 82 miles of BN&SF right-of-way within the San Diego region, BN&SF maintains a freight easement over the 62 miles of coastal mainline and the 20-mile branch line between Escondido and Oceanside. The BN&SF also interchanges freight with the SDIV and with the U.S. Navy. Currently, the BN&SF runs approximately four freight trains per day between San Diego and the Greater Los Angeles area (two in each direction). Locally, increases in rail transit tonnage would increase the number of freight trains. However, these trains would likely operate on an as-needed basis and would not have a fixed schedule. Therefore, noise levels and frequency of passbys would continue to vary greatly from day to day. On some days there may be no increase in freight train activity. Overall, however, an increase in train traffic would yield a consequent increase in noise and vibration in areas adjacent to rail corridors.

Data provided by SANDAG indicate that reopening of the San Diego & Arizona Eastern Railway will result in the elimination of up to 20,000 trucks annually from the highways in the San Diego region after 10 years of operation (SANDAG 1999). Rehabilitation of the 70-mile Desert Line portion of the SD&AE would extend freight service between San Diego and Tecate to the Imperial Valley. To the extent that truck trips are removed from highways, a beneficial effect on noise in the highway corridors would result.

The 2030 RTP is predicated on an increase in population and economic activity in the region, and that increase inevitably has the potential to increase noise generated by a number of transportation modes and related activities. Smart growth land use policies as discussed under the 2030 RTP would concentrate that increase in areas where the urbanized environment already sustains a higher noise level than less developed areas and to avoid major increases in noise in less developed areas. Increases in goods movement call for increased traffic in several modes, principally rail, air cargo, and trucks. On balance in other areas, policies of the 2030 RTP seek to reconcile the effect of increased noise by encouraging more efficient land use, congestion management, transportation, and goods movement policies. To the extent that this efficiency is accomplished in combination with mitigation developed on a project-specific basis as improvements are implemented, potential significant noise impacts can be avoided or mitigated.

4.6.4 Significance of Impacts

Planned transit, highway, and freeway improvements have the potential to significantly impact the local noise environment if sensitive receptors are located nearby. Each individual improvement would require its own noise study as part of the environmental assessment and review process.

4.6.5 Mitigation Measures

State and local jurisdictions have established noise standards and guidelines depending upon the types of land uses. The detailed noise effects of new and improved transportation facilities recommended in the 2030 RTP would be addressed in required project-specific acoustical studies and incorporated into environmental documents and required permits. The following measures shall be required of all such projects.

- Noi-1 Alignments of transportation corridors shall consider noise sensitive areas and reduce noise levels by maximizing distance to sensitive receptors, use of depressed rights-of-way, berms, or sound barrier walls to reduce noise where feasible.
- Noi-2 Land use measures such as zoning designations shall be employed for future development on land adjacent to transportation facilities.
- Noi-3 Where other methods are impractical, operational constraints shall be imposed to the greatest extent feasible (e.g., limits on vehicle speed, regulation of train horns).
- Noi-4 Site-specific and project-specific environmental assessment shall be needed for individual transit projects when they are proposed. Noise impacts may be avoided by careful siting of facilities and the use of noise reducing berms, walls, or other barriers.

4.6.6 Residual Impacts

Application of the above measures on project-specific projects would mitigate potential noise impacts to below levels of significance. No residual impacts are expected to occur.

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4.7 ENERGY

4.7.1 Existing Conditions

The information regarding present and future conditions of energy in the San Diego region is based on SANDAG's 1994 Regional Energy Plan (REP). To supplement this data, SANDAG provided a fuel consumption analysis that was used to assess the energy consumption of the 2030 RTP and the No Project scenario.

Energy Consumption

Transportation-related activities account for 48 percent of the total amount of petroleum products consumed in California and 53 percent of the energy consumed in the San Diego region (SANDAG 1994). Transportation-related energy consumption primarily consists of petroleum-based products: gasoline, diesel fuel, and jet fuel. Most of the gasoline available in the San Diego region originates at the refineries located in the Los Angeles/Long Beach area. This fuel is transported to San Diego by barge and via a pipeline. The fuel is delivered to bulk storage facilities north of Mission Valley and in the South Bay for further distribution to retailers by truck.

Motor vehicles are the largest consumer of fuels in the transportation sector in San Diego, and gasoline accounts for over 90 percent of the energy consumed by on-road transportation sources (SANDAG 1999). Table 4.7-1 shows fuel efficiency average rates by transportation modes. Although fuel efficiency has been improving, the large increase in vehicle miles traveled has generally increased the amount of gasoline consumed annually. According to 1995 data regarding ridership, mass transit has a higher level of fuel efficiency per person. Based on average vehicle occupancy, automobile trips using gasoline and diesel average 26.5 passenger miles per gallon (mpg), while buses average 30.9 passenger mpg. The Coaster commuter rail service averages 30.0 and the trolley averages 29.8 passenger mpg of gasoline equivalent. Forecasts of transit use through the year 2020 indicate that passenger mpg will increase. Specifically, the region's gasoline consumption is projected to increase by 5 percent between 1990 and 2010 to approximately 900 million gallons per year; autos and trucks are projected to become 11 percent more efficient.

After gasoline, diesel fuel is the most utilized transportation energy source, accounting for approximately 10 percent of the energy used annually in the San Diego region's transportation sector. Primary consumers of diesel fuel in the transportation sector are semitractor trucks, buses,

and railway locomotives. Diesel fuel consumption is forecasted to increase 16 percent by the year 2010 to approximately 89 million gallons (SANDAG 1999).

Table 4.7-1
Fuel Efficiency Average
(mpg Gasoline Equivalents)

Category	Fuel	1980	1990	2010
Auto	Gasoline	16	22	25
	Diesel	26	26	30
	Electric	-	-	60
	Methanol	-	-	26
	CNG	-	-	27
Trucks <10,000 lbs.	Gasoline	14	17	18
	Diesel	21	24	24
	Electric	-	-	38
	Methanol	-	-	20
	CNG	-	-	17
Trucks 10,000-19,000 lbs.	Gasoline	7	7	7
	Diesel	10	10	10
Trucks 19,000-26,000 lbs.	Gasoline	5	6	6
	Diesel	8	8	8
Trucks 26,000-33,000 lbs.	Gasoline	4	4	5
	Diesel	5	6	5
Trucks >33,000 lbs.	Gasoline	4	4	4
	Diesel	5	5	5
Trucks - Total	Gasoline	7	7	8
	Diesel	10	10	10
	Electric	-	-	38
	Methanol	-	-	20
	CNG	-	-	17
Urban bus	Diesel	3	3	3
Motorcycle	Gasoline	50	50	50
Light rail (per car)	Electric	3	3	3
Rail (per car)	Diesel	2	2	2

Source: SANDAG 2000

CNG = compressed natural gas

State and Federal Policies

State and federal policies and regulations have an impact on the types of fuels the region needs to meet its transportation needs.

The Federal Energy Policy Act of 1992 mandated vehicle fleets to be converted to alternative fuels starting in 1993. By 2003, 75 percent of federal and state government fleets must be converted, along with 30 percent of local government and private fleets. The requirement may be met by converting existing vehicles or purchasing new fleet vehicles.

Alternative fuel consumption for transportation is expected to increase dramatically between now and 2010. For example, 1990 levels of electric fuels were estimated at approximately 230,000 annual gasoline gallons equivalent (gallons), most of which can be attributed to the San Diego Trolley. With the introduction and market penetration of electric vehicles foreseen by 2003, electricity-based fuel consumption will increase dramatically and reach approximately 18 million gallons by 2010. These figures represent approximately 1.5 percent of projected transportation energy consumed in the region. In 1990, electricity accounted for less than 0.03 percent of transportation energy consumed. More electric energy will be needed as a result of the conversion of vehicles to alternative fuels.

Corporate Average Fuel Economy Standards

The Corporate Average Fuel Economy (CAFÉ) standards are promulgated by the EPA. These standards establish average fuel efficiency values for the fleets of cars produced by each automobile manufacturer. Any increases in the required fuel efficiency of fleets will decrease fuel consumption as the newer, more efficient vehicles replace older, less efficient vehicles.

Alternative Fuel Programs

Alternative fuels are any nongasoline or nondiesel fuel, such as natural gas and electricity. Table 4.7-1 shows the requirements by year for each type of vehicle fleet. The use of alternative-fuel vehicles will reduce the consumption of imported petroleum products.

Among other programs, financial incentives are also included in the Federal Energy Policy Act. Federal tax deductions will be allowed for businesses and individuals to cover the incremental cost

of alternative-fuel vehicles. States are also required by the act to consider a variety of incentive programs to help promote alternative-fuel vehicles.

The California Low-Emission Vehicle Program, established by the California Air Resources Board, is an example of an incentive program that was active prior to the 1992 Federal Energy Policy Act. It requires that a specified number of clean-fuel automobiles be sold in California and that fuel suppliers produce and distribute sufficient amounts of clean fuels (SANDAG 1994). By 2003, at least 10 percent of all cars and light-duty trucks sold by each manufacturer in California must be "zero-emission vehicles" (ZEV). Of existing technologies, only electric vehicles meet the ZEV definition, although it should be noted that their operation requires the burning of fuel at power plants where related air pollution is produced (SANDAG 1999).

California has also established the Katz safe school bus program. This program will replace approximately 10 percent of the pre-1977 school buses in service with safe school buses. A majority of these replacement buses will operate on clean fuels.

As a fuel provider, SDG&E is required to meet vehicle fleet requirements for alternative fuels under the 1992 Energy Policy Act. SDG&E is using and promoting alternative fuels. These programs will help with the market penetration of clean fuel vehicles and fueling stations to make them a viable option.

4.7.2 Significance Criteria

Implementation of transportation improvements in the 2030 RTP would have a potentially significant impact if:

- it results in a 5 percent or greater increase in energy consumption. Energy consumption includes that required for operation of the transportation system (private vehicles and public transit).

4.7.3 Impact Analysis

The 2030 RTP could affect the region's energy consumption. Key freeway corridors such as I-5, I-15, and I-805 would be widened to accommodate HOV/Managed lanes and support the anticipated transit system. New freeway construction would also occur in the Otay Mesa area for the development of SR 11. Therefore, energy consumption could be reduced by new or improved highways that reduce traffic congestion, facilitate smoother traffic flows, and provide routes that are

more direct. This in turn could decrease travel time and distance and, consequently, decrease fuel consumption from individual vehicles. To the extent new or improved highways allow travel that would otherwise not take place, implementation of the 2030 RTP could also act to increase energy consumption.

Proposed transit improvements in the 2030 RTP encourage optimized use of public transportation. The 2030 RTP includes an enhanced transit program with new routes that would operate at higher speeds. Public transportation provides a more energy-efficient mode of travel than single-passenger vehicles, thereby reducing the region's transportation energy consumption. Any reductions in traffic congestion realized through implementation of an enhanced transit program would also allow for more energy-efficient vehicular travel.

Implementation of the 2030 RTP, including discussions related to bicycles, intermodal movement, congestion management, air quality, and energy, also contribute to a reduction in regional energy consumption and would not result in adverse impacts.

For example, new bikeways for new or improved bicycle and pedestrian facilities would encourage the use of bicycles on short home-based trips. The intermodal movement discussion in the 2030 RTP encourages the transport of goods by rail to reduce congestion on the freeway system. Hauling goods by rail has a positive energy impact resulting from the fact the Federal Railroad Administration estimates that intermodal rail is 1.4 to 3.4 times as fuel efficient as trucks (SANDAG 1994).

The 2030 RTP is designed to improve energy efficiency by increasing use of more fuel-efficient public transit, and improving circulation system levels of service. The Plan promotes the use of more efficient modes of transportation and encourages reductions in vehicle miles traveled and the use of alternative fuels. No adverse energy impacts from implementation of these actions are anticipated.

The 2030 RTP includes measures addressing air quality designed to help achieve and maintain air quality standards in the San Diego region. They are consistent with the RAQS and the SIP, and the federal and state Clean Air Acts.

4.7.4 Significance of Impacts

Some components of the 2030 RTP could reduce regional energy consumption while others could cause it to increase. The best overall measure of the impact of the implementation of the 2030 RTP is an evaluation of the Total Daily On-Road Fuel Consumption. Fuel consumption is forecast to increase from 5.7 million gallons in the 2030 No Project condition to 5.9 million gallons with the 2030 RTP. This is an increase of approximately 3.5 percent which falls below the 5 percent threshold used to determine significance.

Although future growth would utilize more energy overall, measures included in the 2030 RTP serve to reduce impacts to energy by improving area roadways, encouraging the use of alternative modes of transportation and energy sources, improving traffic flow, and reducing congestion. Individual project actions are subject to CEQA review for impacts to energy consumption prior to approval and implementation. Impacts to regional energy consumption are considered less than significant.

4.7.5 Mitigation Measures

No specific mitigation measures or strategies are necessary at this time.

4.7.6 Residual Impacts

No energy consumption impacts are identified; therefore, residual impacts are expected to occur.

4.8 GEOLOGY/PALEONTOLOGY

4.8.1 Existing Conditions

Regional Setting

Geologic Provinces

San Diego is underlain by three principal geologic provinces. The majority of the county is in the Peninsular Ranges province bounded by the coastal province to the west and the Salton trough province to the east. The western edge of the Peninsular Ranges province corresponds with the eastern hills and mountains along the edge of Poway, Lakeside, and El Cajon. Extending east of Julian and Jacumba, the province abruptly ends along a series of faults. To the north, the Peninsular Ranges province continues into the Los Angeles basin area; to the south it makes up the peninsula of Baja California.

The Peninsular Ranges are composed primarily of crystalline batholithic rocks. Batholithic rocks are igneous in origin, being formed under extreme heat and pressure by the solidification of magma deep within the earth's crust. The older of the batholithic rocks, forced into the existing rocks, are called "prebatholithic." These older prebatholithic rocks make up the eastern limit of the Peninsular Ranges.

The younger southern California batholith rocks dominate about 80 percent of the visible outcrops of the Peninsular Ranges and were formed about 140 to 70 million years ago. These rocks are generally granitic in composition and weather into spheroidal boulders. Remnants of the eroding southern California batholith dot the tops and slopes of the County's eastern hills and mountains.

As the Peninsular Ranges province experienced uplifting and tilting, a series of large faults, such as the Elsinore and San Jacinto, developed along the edge of the province. The eastern area "dropped" down, creating what is now known as the Salton trough-Gulf of California depression. The Salton trough province, being lower than the surrounding landscape, became an area of deposition with sediments being carried to the depressed area by drainages of the peninsular ranges. Occasionally, the Salton trough was inundated with marine waters from the Gulf of California, adding marine deposits to the sediment (Peterson 1977).

The coastal plain province extends from the western edge of the Peninsular Ranges and runs roughly parallel to the coastline. The province is composed of dissected, mesalike terraces that graduate inland into rolling hills. The terrain is underlain by sedimentary rocks composed mainly of sandstone, shale, and conglomerate beds, reflecting the erosion of the Peninsular Ranges to the east.

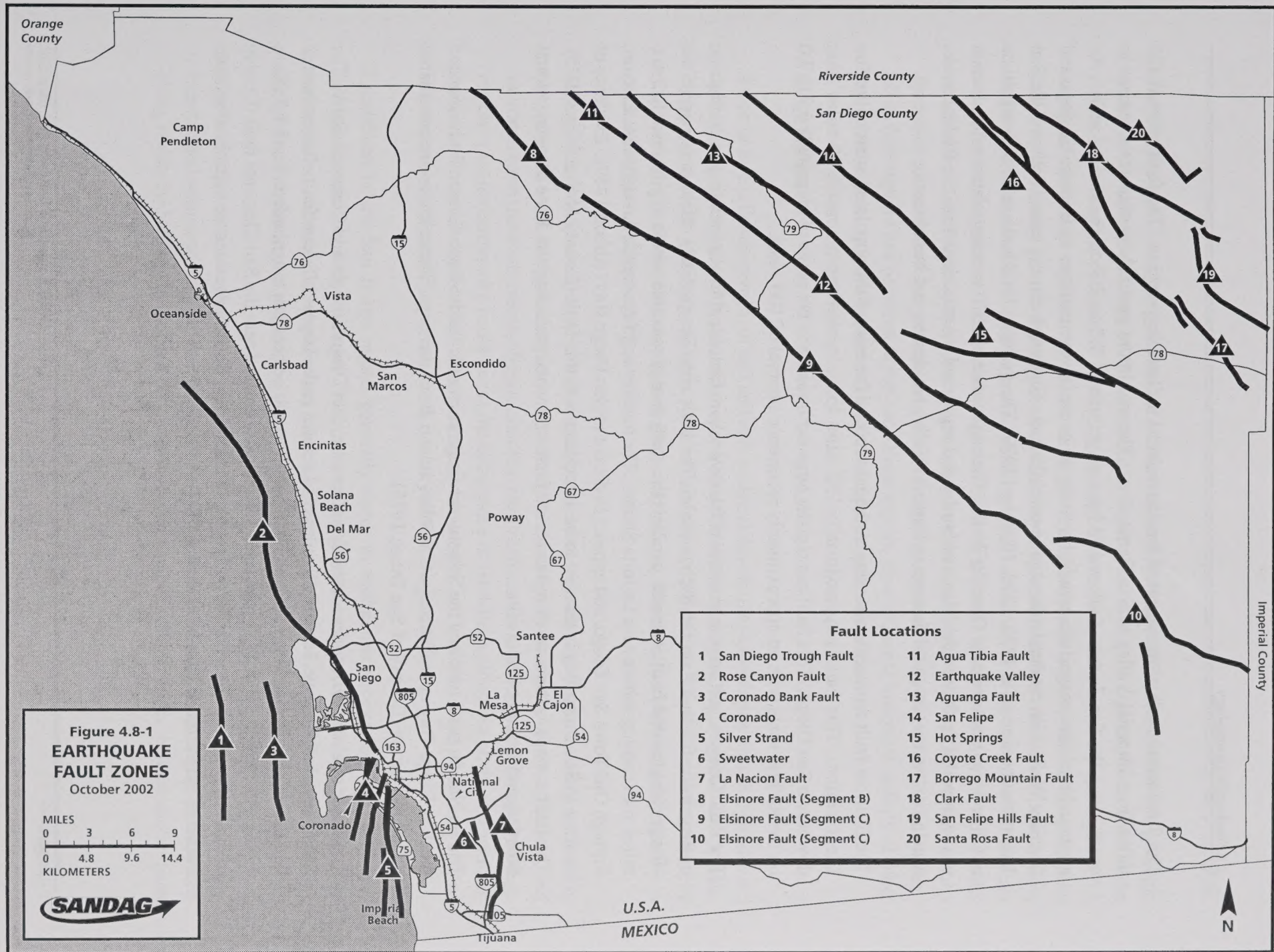
The geological formations within the study area are also unusually rich and have produced exceptional fossil materials from Cretaceous through Pleistocene associations. The region has experienced numerous periods of sea inundation and regression which results in a greater incidence of accumulated plant and animal materials for fossilization. The result is a rich resource of paleontological information (fossil flora and fauna) for the reconstruction of paleoenvironmental conditions and descriptive information for geological reconstruction.

Seismic Activity

Earthquakes are caused by the release of accumulated strain along fractures in the earth's crust (County of San Diego 1975). Several earthquake fault zones exist in and around San Diego region, as shown in Figure 4.8-1. Since high-magnitude shocks transmit energy over large areas, fault zones outside of the San Diego region boundaries are included in this discussion.

The dominant trend of faulting in southern California is northwest-southeast. In the Transverse Ranges, however, east-west to northeast-trending faults predominate, including a nearly east-west striking segment of the San Andreas fault. Historically, most of the recorded earthquakes and recorded fault breaks occurred as a result of rupture along the faults in the San Andreas system, which suggests that most of the accumulating strain energy is being released along these breaks.

Sources of most earthquakes felt in the county are from the Imperial Valley and offshore fault systems (Lee 1977). The Imperial Valley area is the most active source of local earthquakes and is the location of portions of the San Andreas, San Jacinto, and Elsinore faults. The San Andreas fault is outside the county limits but poses a potential hazard to the San Diego region. It extends a total of 650 miles from Baja California to the California coast north of San Francisco. In the vicinity of San Diego region, the San Andreas fault follows the east side of Coachella and Imperial Valleys. The nearest inhabited sections of San Diego region are 30 miles away.



The San Jacinto fault is the largest of the active faults in San Diego region. The fault extends 125 miles from Imperial Valley to San Bernardino. The maximum probable earthquake expected to occur along the San Jacinto fault would be a magnitude of 7.5 to 7.8 on the Richter scale. An earthquake of this magnitude would be likely to cause severe damage in Borrego Springs and Ocotillo Wells with moderate damage to coastal areas. Historical activity associated with the San Jacinto fault occurred in 1890, 1899, 1968, and 1979. The quake in 1968 had a recorded magnitude of 6.8 and was centered near Ocotillo Wells. The earthquake of 1979 was associated with a branch of the Imperial fault near the Mexican border and registered magnitude 6.4 on the Richter scale, causing extensive structural damage to Imperial Valley residences and businesses.

The Elsinore fault represents a serious earthquake hazard for most of the populated areas of the San Diego region. This fault is approximately 135 miles long, located approximately 40 miles from downtown San Diego. This fault can register large earthquakes in the range of magnitude 6.9 to 7.0 on the Richter scale with an approximately recurrence interval of 100 years.

The Rose Canyon fault zone is an active offshore/onshore fault capable of generating an earthquake of magnitude 6.2 to 7.0 on the Richter scale. The fault zone lies partially offshore as part of the Newport/Inglewood fault zone and parallels the north county coastline within approximately 2 to 6 miles until coming ashore near La Jolla Shores. The onshore segment trends through Rose Canyon, through Old Town San Diego, and appears to die out in San Diego Bay (Abbott 1989). Evidence of faulting in San Diego Bay is thought to be associated with this fault (County of San Diego 1975). The fault zone is composed of a number of fault segments, including the Rose Canyon, Mount Soledad, and Country Club faults.

The La Nación fault zone and the Sweetwater fault run parallel to the Rose Canyon fault zone and the San Diego Bay approximately five miles inland from the bay. These faults are considered potentially active (County of San Diego 1975).

The major offshore fault zones are the San Clemente, San Diego Trough, and Coronado Bank. The San Clemente fault zone, located 40 miles off La Jolla, is the largest offshore fault. It is estimated that the maximum plausible quake along this fault would be between magnitude 6.7 and 7.7 (Kern 1988). An earthquake in 1951 registered 5.9 and was centered near the San Clemente fault (County of San Diego 1975). The San Diego Trough and Coronado Bank fault zones are capable of seismic events of magnitude 6.0 to 7.7 (Deméré 1997).

San Diego region faces the potential for substantial damage associated with seismic and geologic activity (County of San Diego 1975). Earthquake faults occur in and through the urban areas of the region, increasing the potential of earthquake damage on structures and potentially endangering the safety of the area's inhabitants. Most damage from earthquake activity results from ground movement, causing ground shaking, surface fault rupture, landslides and mudslides, liquefaction, and tectonic subsidence or uplift. Ground shaking is the oscillation or vibration of earth materials which causes the greatest amount of damage during an earthquake. Ground-shaking hazards usually occur in areas underlain by loose, water-saturated, unstable materials. Surface fault rupture results from the intersection of the ground surface with fault displacement. Only one documented incident of surface rupture has occurred in the San Diego region. Due to recent historical activity of other faults in the county; however, the potential for surface rupture remains.

Slope Failure

Slope failure is the movement of soil and rock material downhill to a lower position. Landslides are the most common naturally occurring type of slope failure in the San Diego region. Block falls, slumps, and block glides are specific types of landslides. The region's landslides are commonly composite slides, a combination of block glides and slumps. Block falls are of concern primarily in coastal bluff areas (Ganus 1977).

Earthquakes and their aftershocks can intensify or activate an unstable slope. Loosely and weakly consolidated soils, steepened slopes which are due to either human activities or natural causes, and saturated earth materials create a fragile situation easily affected by an earthquake. In the San Diego region, a major earthquake could cause the occurrence of landslides along sea cliffs, on mountain roadcuts, along the slopes of Palomar and Laguna Mountains, and in subdivisions where unprotected cut slopes occur in landslide-prone areas (County of San Diego 1975).

Landslides in the San Diego region generally occur in sedimentary rocks such as sandstone, siltstone, mudstone, and claystone. When these fine-grained rocks are exposed to the erosional actions of air and water, they often turn into clay. Seams of saturated clays can be responsible for landslides even on gentle slopes.

Bentonite clay is a component of many San Diego soils. It is an expandable clay randomly interbedded with sandstone strata. The resistant beds of the sandstone can assume a slick surface along which the heavy, waterlogged clays can "slide" down the unstable slope. A slope can be made

potentially unstable by grading operations involving (a) removing material from the bottom of the slope, thus, increasing the angle of the slope; (b) raising the height of the slope above the previous level; (c) saturating the slope with water from septic tank, gutter runoff, or diverted drainage from another part of the slope; or (d) adding fill to the top of the slope, creating additional weight (County of San Diego 1973). In addition, earth-moving activities can reactivate an old slide.

Areas of the county which have experienced sliding are commonly underlain by the Ardath Shale, Friars, Mission Valley, San Diego, and Otay rock formations. The Ardath Shale Formation extends from Torrey Pines State Park to Mission Bay and is composed of a bentonite-rich clay. The Friars Formation occurs from Mission Valley to beyond Rancho Bernardo. The formation is composed of expandable clays with properties similar to those of bentonite. The Mission Valley Formation is found from Mission Valley to Rancho Bernardo. The San Diego Formation occurs throughout the coastal mesas from Mission Valley southward to the Mexican border. The Otay Formation is found in the southwestern portion of the San Diego region and is composed of slide-resistant sandstone with occasional thin interbedding of bentonite clay (County of San Diego 1973).

Regional Paleontological Resources

There are five principal geological periods represented in the study region. The oldest, the Cretaceous, dates back some 120 million years. This is followed by the Eocene, 60 million years ago; the Miocene, 25 million years ago; the Pliocene, 10 million years ago; and most recently, the Pleistocene, 1 million years ago. Each of these periods is defined by broad sea level, rainfall, and temperature characteristics as well as landform alterations. During Late Cretaceous times, the region consisted of moderately high hills of Jurassic and Cretaceous igneous and metamorphic rocks. Deep alluvial fan deposits are laid in the western areas.

The Eocene saw the almost complete removal of prebatholithic rock and the laying down of the La Jolla Formation as a marine sediment. The Poway conglomerate was also deposited during this period as a river delta. The Miocene closed with the uplifting of the San Diego region and the deposition of a series of formations along the eastern margin. The Pliocene was a period of renewed erosion and continued deposit of the Palm Springs and Borrego Formations in the eastern parts of the county. Additionally, the southwestern area (Otay Mesa) of the county was covered by the San Diego Formation. The period known as the last great ice age came in with a second period of uplift that produced the mountain ranges in the county. Additionally, the Pleistocene saw the deposit of the Lindavista Formation on Kearny Mesa and the Sweitzer Formation on San Diego Mesa.

The discovery of fossil materials generally depends on the exposure of these buried sediments through uplifting, erosion, or excavation. Both natural and man-made changes have resulted in the discovery of fossil-bearing strata in many parts of the study area. For instance, there are Cretaceous age rocks and fossils in Letterbox Canyon, in the northern San Diego region, which are noteworthy because this appears to be the only exposure of this age between the San Diego region and the Santa Ana Mountains. A locality is also known from Carlsbad, which yielded a number of animal fossils.

The Eocene sediments, which in coastal areas can generally be described as sandstones, siltstones, and claystones of the Santiago and Delmar Formations, contain remnants of nearshore marine vertebrates such as sharks, rays, and bony fish and the remains of terrestrial vertebrates including lizards, snakes, turtles, marsupials, insectivores, rodents, primates, carnivores, and camel-like and rhinoceros-like mammals. Fossil recoveries and known localities of Eocene fossil exposures include areas in Carlsbad, near El Camino Real and around Batiquitos Lagoon, as well as exposures in the Black Mountain and Miramar areas.

Recent highway improvement projects in the northern and southern parts of the county have produced rich fossil-bearing beds. The north county find is of Eocene age. Along an improvement corridor for SR 78, a "bone bed" of well-preserved specimens was uncovered by Caltrans construction workers and subsequently excavated by scientists from the San Diego Museum of Natural History. Identified specimens include dilophodon, a tapir-like animal; protoreodon, a collie-sized grazing animal; lemur-like primates; and a squirrel-like rodent. In addition, areas along the San Diego River in the Friars Road and Mission Gorge segments are known to be excellent exposures for Eocene vertebrate fossils, and a segment of Tecolote Creek displays Eocene sediments as well.

Pliocene period materials are known from Tecolote Creek and the Miramar Reservoir areas. This period is known for marine materials such as shark teeth and whale and porpoise bones. Chula Vista excavations recently produced a number of Pliocene specimens including an extinct form of porpoise and a well-preserved whale.

The Pleistocene was a period of great sea-level flux, which resulted in the deposition of estuarine invertebrates in shell beds along the coastal margin. There are fossil-rich Pleistocene soils in the Carlsbad area, near Batiquitos Lagoon, as well as some in the Torrey Pines State Park vicinity. These deposits contain marine and estuarine invertebrates such as clams and snails. There are also recoveries of shark, ray, and bony fish elements from some of these localities.

As a data set, each of these localities represents vital information for the reconstruction of past environmental conditions and for developing an understanding of the evolution of numerous species. The development of the coastal portion of the San Diego region has resulted in the loss of a number of these resource areas or the fragmentation of the data.

Regulatory Framework

Administrative actions have been implemented by local, state, and federal agencies to minimize the effects of such geologic hazards as earthquakes and landslides.

The FTA and Caltrans have standard specifications for the design and construction of highway projects that take into account seismic risk and other geologic hazards. Similar design specifications exist for transit projects administered by the MTDB and the FTA.

Slope instability or erosion problems in the county are primarily regulated through the Uniform Building Code (UBC) and the grading ordinances of the cities and the county. The UBC requires special foundation engineering and soils investigation on proposed development sites located in geologic hazard areas. These reports must demonstrate either that the hazard presented by the project will be eliminated or that there is not a danger for the intended use. To minimize slide danger and erosion, a grading permit must be obtained from the appropriate jurisdiction for all major earth-moving projects. All land-use jurisdictions have grading ordinances designed in part to assure that development in earthquake- or landslide-prone areas does not threaten human life or property.

Many of the county's most slide-prone or erosion-prone areas occur along the coastal bluffs which are within the jurisdiction of the California Coastal Commission. In addition to protecting unique recreational and scenic resources, the Coastal Commission requires evaluation of the geologic hazards associated with coastal development. The local geologic background and potential for geologic impacts are important components of the Local Coastal Programs which have been or are in the process of being prepared for each coastal jurisdiction.

Paleontological resources are protected under the National Historic Preservation Act and subject to review under the FHWA Environmental Review Guidelines, CEQA, and local environmental review guidelines. Important fossil data sets have been recovered from major roadway projects locally.

4.8.2 Significance Criteria

The 2030 RTP would be considered a potentially significant impact if it increases the exposure of people to the risk of property loss, injury, or death involving:

- rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault, strong seismic-related ground failure, including liquefaction, and landslides;
- result in substantial soil erosion or the loss of topsoil;
- located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potential result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse;
- located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code, creating substantial risks to life or property.

Significance criteria for paleontological resources include:

- directly or indirectly destroys a unique paleontological resource or site or unique geological feature.

4.8.3 Impact Analysis

Geology and Soils

Seismic Activity

The entire San Diego region is susceptible to impacts from seismic activity. Numerous active faults are known to exist in the region that could potentially generate seismic events capable of significantly affecting existing and proposed transportation facilities. As such, new transportation facilities would be exposed to both direct and indirect effects of earthquakes. Potential affects from surface rupture and severe groundshaking could cause catastrophic damage to transportation infrastructure, particularly overpasses and underground structures.

The 2030 RTP includes highway, arterial, and public transit projects throughout the San Diego region. Highway projects primarily include widening existing highways and constructing new interchanges. Transport and rail improvements include double-tracking along the coastal corridor, and the Sorrento Mesa and Kearny Mesa transitways. All the existing highways and rail lines in the San Diego region are subject to seismic influences to some degree. Similarly, new bus routes and goods movement routes proposed in the 2030 RTP on existing roadways and railways would each be susceptible to seismic impacts.

The region is predicted to experience strong earthquake-induced ground shaking during the 30 year planning scenario. Earthquakes within 60 miles of the San Diego region are capable of generating significant ground shaking, which could be generated along the San Clemente, San Diego Trough, Coronado Bank, Rose Canyon, Elsinore, and San Jacinto fault zones. The closest active fault is the Rose Canyon fault zone that crosses the I-5 corridor south of La Jolla. A major earthquake occurring on this fault or other regional active faults in the southern California area could subject the 2030 RTP transportation network to moderate to severe ground shaking.

The crossing of the I-5 corridor over the Rose Canyon fault zone creates a potential for ground rupture during a seismic event. If ground rupture was to occur, significant impacts could result from substantial damage to transportation facilities and human injury.

Although seismic activity can cause damage to substandard construction, new designs can significantly reduce potential damage. Earthquake-resistant designs employed on new structures minimize the impact to public safety from seismic events. As such, 2030 RTP projects that employ design standards that consider seismically active areas would reduce their potential for significant impacts.

Slope Failure

Portions of the 2030 RTP transportation improvements would be constructed through geologic formations susceptible to slope failure as described above, thereby, increasing the risk to people and facilities and creating a potentially significant impact. Site-specific geotechnical investigations would be required prior to any transportation facility construction. These investigations would identify areas of potential failure and recommend remedial geotechnical measures to eliminate any problem.

Paleontological Resources

The implementation of the 2030 RTP would result in transportation facilities being constructed within geologic formations with moderate to high paleontological resource potential. At the project-specific level, paleontological surveys would be required to determine the resource value for areas traversed by improvements in the 2030 RTP. Monitoring by a qualified paleontological monitor would also be a project-specific requirement in all those project areas where any grading would occur in formations of moderate to high resource potential.

4.8.4 Significance of Impacts

Portions of the improvements proposed by the 2030 RTP would likely traverse areas subject to seismic shaking, potential slope failure, and formations with moderate to high potential to contain fossils. There is the potential for significant geologic and paleontological impacts.

4.8.5 Mitigation Measures

All mitigation measures shall be included in a project-level analysis as appropriate. The project proponent or local jurisdiction shall be responsible for ensuring adherence to the mitigation measures prior to construction. All projects shall adhere to State of California design standards and all standard design, grading, and construction practices to avoid or reduce geologic hazards.

Geology and Soils

Geo-1 Caltrans has developed engineering design specifications for freeway/highway projects to consider and compensate for site-level geologic and seismic conditions. All site designs shall be reviewed and approved by the appropriate agency, such as FHWA.

Paleontological Resources

Paleo-1 In general, when a transportation construction project involves known fossil-bearing rocks, qualified researchers are stationed on-site to observe during grading and recover scientifically valuable specimens. A certified paleontologist shall be retained by the project implementing agency prior to construction to establish procedures for surveillance and the preconstruction salvage of exposed resources if fossil-bearing rock

have the potential to be impacted. The monitor shall provide pre-construction coordination with contractors, oversee original cutting in previously undisturbed areas of sensitive formations, halt or redirect construction activities as appropriate to allow recovery of newly discovered fossil remains, and oversee fossil salvage operations and reporting.

4.8.6 Residual Impacts

Implementation of the geotechnical recommendations would reduce impacts due to seismic exposure and slope failure to below a level of significance. The paleontological monitoring required as mitigation would ensure that impacts are reduced to below a level of significance.

4.9 WATER RESOURCES

4.9.1 Existing Conditions

Regional Setting

Surface waters in the region include bays, lagoons, lakes, reservoirs, streams, and rivers (Figure 4.9-1). Many of these water bodies harbor a sensitive biotic community easily affected by added pollutant discharges; the quality of sensitive bodies of surface water varies. Certain reservoirs, particularly the Sweetwater Reservoir, have experienced high total dissolved solids (TDS) levels due to introduction of Colorado River water and high evaporation rates. Urban runoff carries pollutants to reservoirs, rivers, coastal lagoons, and bays. Typical pollutants include dissolved solids, nutrients such as nitrate and phosphate, organic materials, bacteria, heavy metals, pesticides, and toxic industrial wastes. Nutrient levels in the coastal lagoons have also increased due to fertilizer-laden runoff from agricultural lands. Sedimentation from unprotected construction sites is an additional water quality problem that is altering certain sensitive lagoons.

Urbanization involving buildings, pavements, roofs, and generally any new impervious surface greatly increases the amount of water in the form of runoff entering the drainage system. Rainfall that would have been absorbed by vegetation and soil and cleansed through the natural filtration process is free to flow over the solid surface. Hence, further increasing the frequency and occurrence of flooding because of increases in peak flow velocities and levels. San Diego often experiences prolonged dry periods, punctuated by infrequent wet periods of a year or two year duration. Wet periods have included 1951-1952, 1957-1958, 1965-1966, 1968-1969, 1979-1980, and 1997-1998. In the past 50 years, San Diego has experienced less than 10 wet years and much of the development in San Diego region has taken place during the extended dry periods. Residential development has occurred within many of the region's natural watersheds. This construction directly increases the potential for flood damage.

The San Diego, Tijuana, San Dieguito, and Santa Margarita Rivers experience flooding that impacts roadways and vehicular circulation. Flooding typically affects local streets and roads, but some regional arterials can also be impacted.

Section 303d of the Clean Water Act requires the State Water Resources Control Board (SWRCB) to compile a list of impaired water bodies throughout the state. The water bodies in the San Diego region which are listed as impaired include portions of the water bodies listed in Table 4.9-1.

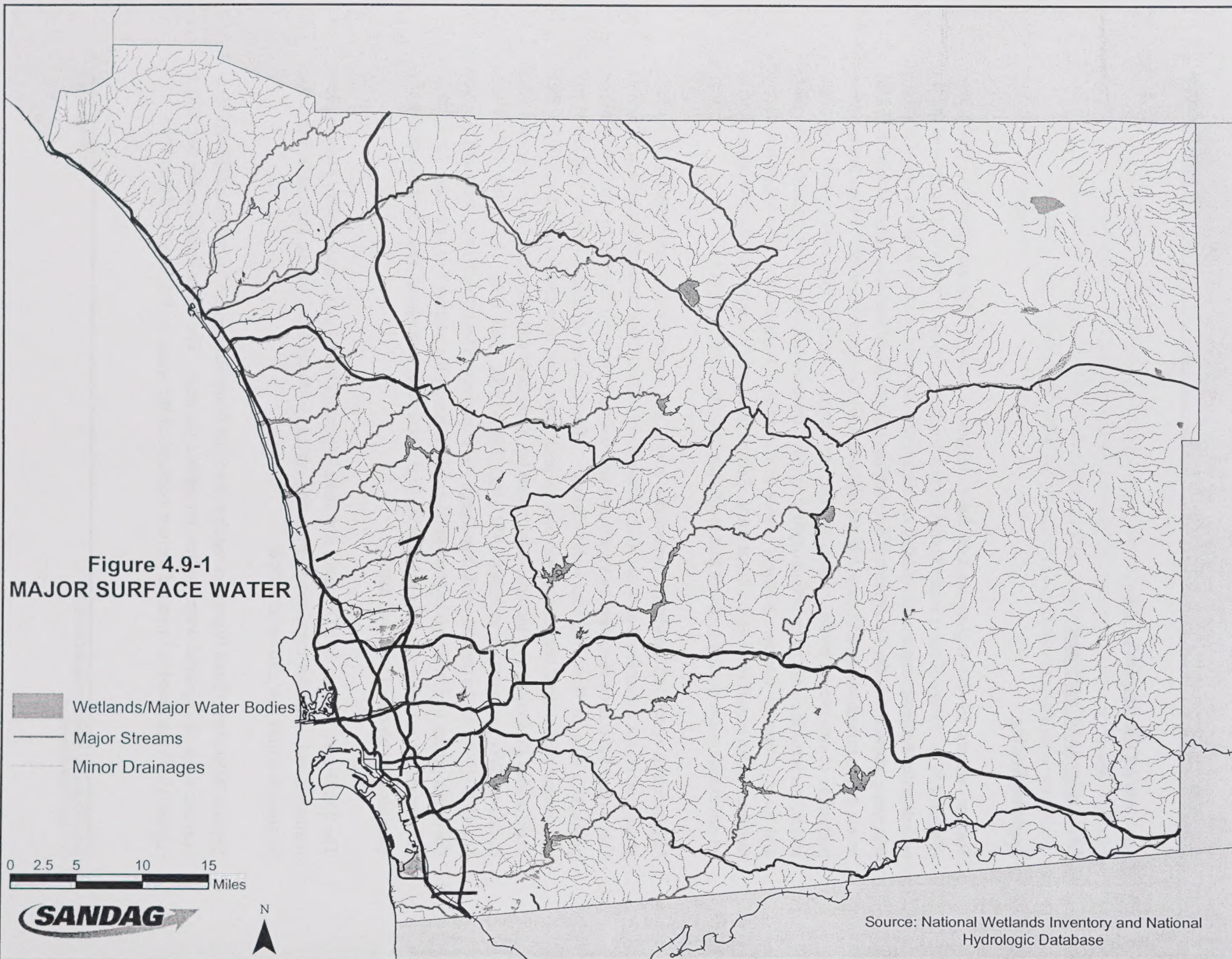


Table 4.9-1
List of Impaired Water Bodies

Water body	Pollutant/Stressor
Pacific Ocean	High Coliform Count
Mission Bay	Eutrophic, High Coliform Count, Lead
San Diego Bay	Benthic Effects, Copper, Sediment Toxicity
Agua Hedionda Lagoon	High Coliform Count, Sedimentation/Siltation
Buena Vista Lagoon	High Coliform Count, Nutrients
Los Penasquitos Lagoon	Sedimentation/Siltation
San Elijo Lagoon	Eutrophic, High Coliform Count, Sedimentation/Siltation
Santa Margarita Lagoon	Eutrophic
Guajome Lake	Eutrophic
Aliso Creek	High Coliform Count
Chollas Creek	Cadmium, Copper, High Coliform Count, Lead, Toxicity, Zinc
Rainbow Creek	Eutrophic
San Juan Creek	High Coliform Count
Tecolote Creek	Cadmium, Copper, High Coliform Count, Lead, Toxicity, Zinc
Tijuana River	Eutrophic, High Coliform Count, Organic Enrichment, Pesticides, Solids, Synthetic Organics
Tijuana River Estuary	Eutrophic, High Coliform Count, Lead, Nickel, Pesticides, Thallium, Trash
Famosa Slough and Channel	Eutrophic
Loam Alta Slough	Eutrophic, High Coliform Count

Source: RWQCB 1999

Regulatory Framework

Federal, state, and regional agencies are responsible for regulating water quality and managing both point and nonpoint sources of pollutants. Section 402 of the Clean Water Act established the Federal Water Pollution Control Act of 1972 which, through the National Pollutant Discharge Elimination System (NPDES), controls water pollution by regulating point sources that discharge pollutants into waters of the U.S. Implementation of the act is the responsibility of the Environmental Protection Agency (EPA), which has delegated much of that authority to state and regional agencies. The EPA and U.S. Army Corps of Engineers (USACE) also review and permit proposed discharges or dredging in waters of the U.S., including wetlands, under the Clean Water Act.

In accordance with the California Porter-Cologne Water Quality Control Act of 1969, the SWRCB and nine Regional Water Quality Control Boards (RWQCB) impose requirements on water pollution discharge; establish ocean, surface water, and groundwater quality objectives based on current or potential beneficial uses; manage the NPDES in California; and regulate waste discharges. Each regional board is required to adopt a Water Quality Control Plan or Basin Plan. The document for the San Diego region, prepared by Region 9, is the *Water Quality Control Plan for the San Diego Basin*. The basin plan has four major components: (1) designate beneficial uses for surface and groundwater; (2) set numerical and narrative objectives that must be attained or maintained; (3) describe implementation programs to protect the beneficial uses of all water in the basin; (4) describe surveillance and monitoring activities to evaluate the effectiveness of the Basin Plan (RWQCB 1994).

For the purposes of transportation development, conformance with the Clean Water Act is established through compliance with the requirements of the SWRCB's 99-08-DWQ (Stormwater Discharges Associated with Construction Activity). This permit applies to any project which disturbs more than 5 acres of land. This requirement is expected to be lessened to 1 acre in late 2002 (SWRCB 2002). To comply with the permit, the applicant for a construction permit must file a complete and accurate Notice of Intent with the SWRCB. Compliance requires conformance with applicable best management practices (BMPs) and development of a Storm Water Pollution Prevention Plan (SWPPP), plus development of a monitoring program plan that would prevent construction pollution from contacting storm water. The intent is to keep all erosion from moving off site and into receiving waters. The SWPPP requires an erosion control plan for newly graded areas and permanent facilities for long-term water quality control such as grass swales. Ordinances have been established county-wide which require stabilization and revegetation of ground disturbed by grading and require special erosion control measures and monitoring. The requirements often include the preparation of a grading plan which incorporates BMPs for runoff and erosion control such as catchment basins, filtration traps, energy dissipating measures, berms, sandbags, and hay bales. All graded slopes must be stabilized prior to November 15, by means of native vegetation or other suitable means. Grading cannot occur from November 15 through March 31 without prior approval.

Compliance with the RWQCB's NPDES Permit No. 108758, Waste Discharge Requirements for Discharges of Urban Runoff from the Municipal Separate Storm Sewer Systems Draining the Watersheds of the County of San Diego, the Incorporated Cities of San Diego County, and the San Diego Unified Port District, which was updated in February 2001, requires that all jurisdictions within the San Diego region prepare Jurisdictional Urban Runoff Management Plans (JURMPs).

Each JURMP must contain a component addressing construction activities and a component addressing existing development.

In 1999, the SWRCB issued the "National Pollutant Discharge Elimination System (NPDES) Permit, Statewide Storm Water Permit and Waste Discharge Requirements for the State of California, Department of Transportation (Caltrans)" NPDES No. CAS000003. This permit regulates storm water discharge from Caltrans properties, facilities, and activities.

Water Pollutant Sources

Sources of pollutants can be classified as two types: nonpoint and point sources. Pollutants from these two types of sources tend to be of different composition and require different types of management. These are described below.

Nonpoint Sources

Nonpoint sources are those sources of water pollutants which do not discharge to a watercourse from a pipe. Nonpoint sources are typically diffused and generally cannot be treated in the same manner as point sources. Section 208 of the 1972 Federal Water Pollution Control Act requires comprehensive areawide planning and management to control nonpoint source pollution from urban and rural land. In the San Diego region, such planning is the joint responsibility of SANDAG and the RWQCB.

Previous pollution control efforts have largely concentrated on point source discharges, such as municipal and industrial wastes. Nonpoint sources, however, have been suspected of causing significant water quality problems. In urban areas, the stormwater runoff from streets likely carries considerable quantities of harmful materials, such as oil, rubber, metals (including lead), pathogens, trash, and other solids. In agricultural areas, the fate of pesticides and nutrients in surface runoff is not fully understood.

As discussed under the Regulatory Setting, the RWQCB's NPDES Permit No. 108758 directs NPDES co-permittees to develop programs to manage and control urban runoff. Co-permittees are required to develop a JURMP, which include best management practices, either as source control to reduce the loading and transport of pollutants in runoff; or as treatment methods to reduce the pollutant loading prior to discharge to a water body. Co-permittees must regulate non-point source pollutants from commercial, industrial, municipal, and residential sources.

Caltrans permit allows the agency to regulate non-point source discharge from their properties, facilities, and activities. Caltrans has prepared a series of handbooks outlining best management practices for construction activities and municipal and industrial non-point source pollution. Caltrans also requires all contractors to prepare and implement a program to control water pollution effectively during the construction of all projects (Caltrans 2000a).

Point Sources

Point sources of water pollutants are defined as sources from which wastewater is transmitted in some type of conveyance (pipe and channel) to a water body, and are classified as municipal or industrial sources. Municipal point sources consist primarily of domestic treated sewage and processed water.

Water pollution from industrial point sources is controlled through discharge requirements prepared by the RWQCB. Industrial point sources are primarily from such operations as sand and gravel extraction; livestock and dairy operations; trailer park, park, and camp development; electrical power generation; metal plating and printed-circuitry etching; operations associated with ship building and repair; and wastes from federal, commercial, and recreational vessels. An industrial pretreatment program requires all industries to remove industrial pollutants prior to discharge into the domestic sewer system.

Amendments to the Clean Water Act in 1987 broadened the scope of the NPDES program. In 1990, EPA published regulations making point source discharges from stormwaters subject to NPDES permits issued for point source discharges from industrial and construction activities subject to NPDES under federal stormwater effluent guidelines. The NPDES permits are issued by the RWQCB and require development and implementation of programs to identify and eliminate illegal discharges of pollutants and monitoring reporting programs. The industrial and construction permits fall under a general permit issued by the SWRCB. Transportation facilities are included under the industrial permit requirements.

Potential Flood Hazards

The U.S. ACOE has outlined the floodplains for the major rivers in the region. This designation is determined by predicting the amount of discharge associated with a 50-year and 100-year flood. A 50-year flood refers to a flood level with a statistical occurrence probability of two percent in any given year; a 100-year flood has a one percent probability of occurrence per year. Floodplain

mapping is an ongoing process in the county; such maps must be regularly updated for both major rivers and tributaries as land uses and development patterns change.

Executive Order 11988, Floodplain Management, was issued in 1977. The major requirements of this federal order are to avoid support of floodplain development; to prevent uneconomic, hazardous, or incompatible use of floodplains; to protect and preserve the natural and beneficial floodplain values; and to be consistent with the standards and criteria of the National Flood Insurance Program (NFIP). FHWA regulations require that a local hydraulic study and risk assessment be performed where a planned facility or action would encroach on a base floodplain or support incompatible floodplain development. When the hydraulic study indicates significant encroachment, findings must be made that it is the only practicable alternative.

The NFIP is a federal program administered by the Flood Insurance Administration of the Federal Emergency Management Agency (FEMA). It enables individuals who have property (a building or its contents) within the 100-year floodplain to purchase insurance against flood losses. Community participation and eligibility, flood hazard identification, mapping, and floodplain management aspects are administered by state and local programs and support directorate within FEMA. FEMA works with the states and local communities to identify flood hazard areas and publishes a flood hazard boundary map of those areas.

The basic tools for regulating construction in potentially hazardous floodplain areas are local zoning techniques. Proper floodplain zoning can be beneficial in the preservation of open space, retention of floodplains as groundwater recharge areas, and directing of development to less flood-prone areas. No further construction without engineered flood protection has been permitted in the area since July 1976, when all jurisdictions in the region were certified as participants in the NFIP.

The County Department of Sanitation and Flood Control and the engineering departments of the incorporated areas are responsible for designing, constructing, and maintaining flood control facilities in their respective jurisdictions. These responsibilities include the evaluation of proposed construction projects with regard to their potential to increase flood hazard.

4.9.2 Significance Criteria

The 2030 RTP would be considered a potentially significant impact if transportation improvements would:

- violate any water quality standards or waste discharge requirements;
- substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there should be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted);
- substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation on- or off-site;
- substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site;
- create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems.

4.9.3 Impact Analysis

The 2030 RTP transportation improvements that would have a direct water quality impact include construction of new freeways, upgrading of existing freeways, construction of arterial roads and bicycle pathways, and transit projects involving construction of facilities.

During the construction of the 2030 RTP transportation improvements, erosion due to exposed graded surfaces, excavation, stock piling, or boring would potentially contribute to the sediment load in surface waters. Deposition of sediments downstream may be significant if they are introduced into a potable water supply (reservoirs), flood control channels, or wetlands. Increased deposition of sediments into water bodies can result in increased turbidity, clog streambeds, degrade aquatic habitat, and interfere with flow. New highway surfaces would also increase runoff quantities and velocities during rainstorms, resulting in increased sedimentation. For these reasons, even projects not located directly adjacent to, or crossing a sensitive area, could result in water quality impacts.

Transportation projects included in the 2030 RTP would result in increased impervious surfaces. These impervious surfaces would result in increased runoff, adding to local non-point source pollution. Chemical pollutants contained in runoff would be primarily attributable to motor vehicles,

which contribute particulate materials from fuel combustion, petroleum products, metals, rubber, and asbestos to roadway pollutants. In addition, a potential would exist for biologically active chemicals such as herbicides and fertilizers used in landscape maintenance. These pollutants accumulate on paved surfaces and adjacent to the roadway; rain flushes them down storm drains and into natural drainages, and they are eventually deposited in the aquatic environment (i.e., lagoons, rivers, and lakes).

Transportation projects which significantly increase a watershed's impervious paved surfaces or which are constructed in floodplains have a potential for incrementally increasing flood hazards to both adjacent and downstream development.

In addition, water resources and water quality could be directly impacted by the highway and transit improvements in the 2030 RTP. Planned improvements along or within key highway corridors (e.g., I-15 over Lake Hodges), double-tracking improvements along existing coastal corridors, may require fill or alteration of watercourses and lagoons. Proposed bus transit improvements would use existing roadways, so operational improvements to the bus system would have little to no change to water quality. Rail lines do not represent large areas of hardscape but double-tracking along the North County corridor could affect coastal lagoons and other water bodies. Transit stations are typically not larger than five acres in area. Potential impacts from construction of transit stations can be readily mitigated.

4.9.4 Significance of Impacts

Implementation of the proposed transportation improvements would create significant impacts by increasing the amount of impervious surface area and contributing to increased runoff. Runoff from new highways and other transportation facilities is known to carry pollutants and sedimentation and may contribute to downstream flooding.

4.9.5 Mitigation Measures

All new and improved transportation facilities must comply with federal, state, and local policies, standards, and land use strategies that address water resource issues. These would include programs and regulations of the EPA, FHWA, USACE, RWQCB, CDFG, local flood control districts, and other local jurisdictions. In general, compliance with these regulations and permit procedures would be effective in mitigating potential impacts to water resources. Caltrans projects would be required

to implement best management practices outlined in their handbooks (Caltrans 2000a). Specific measures to address surface water, groundwater, and flooding are provided below.

The following mitigation measures can reasonably be expected to be a part of the design and construction of the 2030 RTP transportation improvements.

Surface Water

- Water-1 To the extent feasible, drainage of roadway runoff shall be designed to run through grass median strips, contoured to provide adequate storage capacity and to provide overland flow, detention, and infiltration before it reaches culverts. Detention basins and ponds, aside from controlling runoff rates, can also remove particulate pollutants through settling.
- Water-2 Proper erosion control measures shall be implemented during construction, and will include measure such as jute netting, straw and chemical mulches, temporary retention ponds, or quick revegetation. Other control measures include limiting the amount of exposed area and preventing construction vehicles and/or equipment from passing through or near natural drainages.
- Water-3 Long-term sediment control should include an erosion control and revegetation program designed to allow reestablishment of native vegetation on slopes in undeveloped areas.
- Water-4 In areas where habitat for fish and other wildlife would be threatened by transportation facility discharge, alternate drainageways should be sought to protect sensitive fish and wildlife populations. Heavy-duty sweepers, with disposal of collected debris in sanitary landfills, should be used to effectively reduce annual pollutant loads. Catch basins and storm drains should be cleaned and maintained on a regular basis.

Groundwater

- Water-5 Detention basins, infiltration strips, and other features to facilitate groundwater recharge shall be incorporated into the design of new freeway and roadway facilities.

Flooding

- Water-6 Projects shall be designed so that they do not increase downstream flooding risks by substantially increasing peak runoff volumes. This could be achieved by increasing the size of local flood control facilities serving the project areas, or by including detention ponds in designs for roadway medians, parking areas, or other facilities.
- Water-7 Projects shall be designed to allow lateral transmission of stormwater flows across transportation corridors with no increased risk of upstream flooding. Culverts and bridges shall be designed to adequately carry drainage waters through project sites. The bottom of overpass structures shall be elevated at least 1 foot above the 100-year flood elevation at all stream and drainage channel crossings.
- Water-8 All roadbeds for new highway and rail transit facilities shall be elevated at least 1 foot above the 100-year base flood elevation.

4.9.6 Residual Impacts

Implementation of specific mitigation measures for water quality impacts would reduce potential 2030 RTP impacts to below levels of significance. No residual impacts are expected.

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4.10 BIOLOGICAL RESOURCES

4.10.1 Existing Conditions

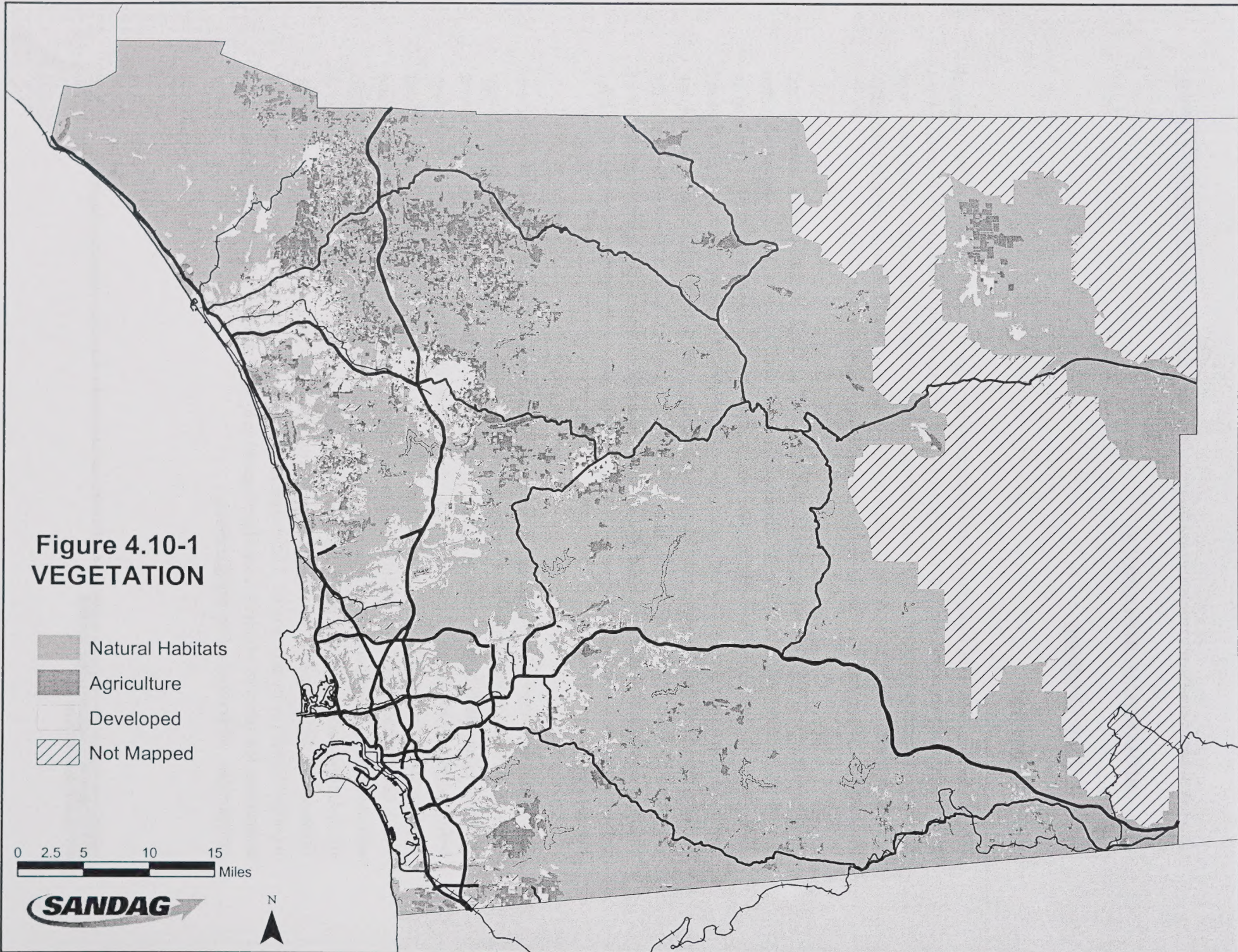
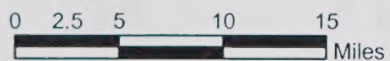
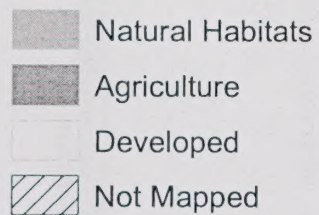
Regional Overview

The influences of climate, topography, and soils combine to determine the character of the biological environment of any region. Each of these factors varies greatly throughout San Diego, resulting in a diversity of vegetation communities which include coastal wetlands, grasslands, vernal pools, sage scrubs, chaparrals, riparian woodlands, oak woodlands, coniferous forests, and creosote bush scrub. At least 50 different plant communities are known to occur (Oberbauer 1991).

Three general physiographic regions are found within the San Diego region: coastal, montane, and desert. The coastal region occurs at elevations generally below 3,500 feet. It encompasses that area along the immediate coastline of the Pacific Ocean as well as the more easterly mesa and interior foothills. The montane region occurs at elevations above 3,500 feet to a maximum of 6,500 feet and includes the major mountain systems of the peninsular range which occur in the county: San Ysidro, Cuyamaca, Volcan, Laguna, and Vallecitos. The Colorado Desert region is found to the east of the montane region at elevations from sea level to approximately 3,000 feet. The generalized location of natural habitats is shown on Figure 4.10-1, as well as areas currently developed or used for agriculture.

The majority of the existing and proposed transportation improvements in the 2030 RTP are located within the coastal region as this is where the majority of the population is located. Chaparral, sage scrub, and grassland communities are the most common habitats found in this region, with chaparral being the most widespread. Riparian woodlands are predominantly distributed in a linear pattern along rivers and streams throughout this region. Plant communities that are of particular interest which occur within this region include southern foredunes, southern coastal bluff scrub, maritime succulent scrub, Diegan coastal sage scrub, southern maritime chaparral, native grassland, San Diego mesa hardpan/claypan vernal pools, southern coastal salt marsh, coastal brackish marsh, coastal freshwater marsh, riparian woodlands and scrubs, coast live oak woodland, Engelmann oak woodland, and Torrey pine forest. These communities provide habitat for a diversity of plant and animal species, many of which are considered sensitive by state and federal resources agencies, local jurisdictions, and conservation organizations.

**Figure 4.10-1
VEGETATION**



Plant communities that occur in the montane region of San Diego overlap somewhat with the chaparral, scrub, riparian, and woodland communities of the coastal region; however, there are others that are unique to the mountains of the region. These include coniferous woodlands, black oak woodlands, and montane meadows. All of these plant communities provide habitat for a diversity of plant and animal species, and although fewer than those found in the coastal regions, sensitive species are well represented.

The plant communities present in the Colorado Desert region are quite distinct from those found within the coastal and montane regions of San Diego. The majority are scrub communities, of which creosote bush scrub is dominant. This plant community is also the second most common vegetation type in the county. A number of sensitive plant and animal species are also found within these desert region plant communities.

Sensitive Resources

The San Diego region contains habitats and species that are considered to be sensitive by state and federal agencies, affected local jurisdictions, and conservation organizations.

For the purposes of this document, identification of sensitive species in the San Diego region were compiled from multiple sources, including the California Natural Diversity Data Base (CNDDB). The CNDDB contains species which are listed, are proposed, or are candidates for listing as threatened or endangered by the U.S. Fish and Wildlife Service (USFWS) or by the California Department of Fish and Game (CDFG) as endangered, threatened, or rare. The CNDDB also contains species within the California Native Plant Society's (CNPS) *Inventory of Rare and Endangered Vascular Plants of California* (Skinner and Pavlik 1994). The sensitive species list also contains certain species called out in local conservation planning documents. This data list is provided herein as Appendix B. Sensitive habitat types are those which are identified by the CNDDB in its Preliminary Descriptions of the Terrestrial Natural Communities of California (Holland 1986) or considered to be endangered, threatened, or rare by state and federal resource agencies, local jurisdictions, or specialists.

Approximately 30 sensitive habitat types are documented to occur within the San Diego region (Table 4.10-1). A notable example of a sensitive habitat type is Diegan coastal sage scrub. The distribution of coastal sage scrub, once much more abundant in the coastal region to which it is restricted, has sustained cumulative losses of up to 72 percent in recent years (Oberbauer 1990), with over 8,000 acres lost between 1984 and 1991 (Keeler-Wolf 1991).

**Table 4.10-1
Sensitive Habitat Types**

Southern coastal bluff scrub
Maritime succulent scrub
Diegan coastal sage scrub
Southern mixed chaparral (with occurrence of sensitive species)
Southern maritime chaparral
Coastal sage-chaparral scrub
Native grassland
Non-native grassland (with occurrence of sensitive species)
San Diego mesa hardpan vernal pool
San Diego mesa claypan vernal pool
Southern coastal salt marsh
Coastal brackish marsh
Coastal and valley freshwater marsh
Southern coast live oak riparian forest
Southern arroyo willow riparian forest
Southern cottonwood-willow riparian forest
Southern sycamore-alder riparian woodland
Desert fan palm oasis woodland
Southern willow scrub
Mule fat scrub
Black oak woodland
Coast live oak woodland
Engelmann oak woodland
California walnut woodland
Elephant tree woodland
Torrey pine forest
Southern interior cypress forest

Approximately 145 sensitive animal species have known distributions within the San Diego region, including 13 invertebrates, 3 fish, 7 amphibians, 18 reptiles, 87 birds, and 24 mammals (Appendix B). Of these, 13 species are federally listed as endangered, 2 are proposed for federal listing, 7 are state listed as endangered, and 5 are state listed as threatened. Many of the rest are CDFG species of

special concern or fully protected species, or species classified by the MSCP/MHCP as covered species or narrow endemics.

Approximately 165 sensitive plant species also have known distributions within the San Diego region area (Appendix B). Of these, 12 are federally listed as endangered, 6 are federally listed as threatened, 19 are state listed as endangered, 1 is state listed as threatened, and 7 are state listed as rare. The majority of the species are contained within the CNPS Inventory, many on Lists 1 or 2 (which indicates a status of rare and endangered either throughout the entire range or within California) or are species classified as MSCP covered species or narrow endemics.

Wildlife corridors are integral to the preservation of sensitive plant and animal species and corridors themselves can be considered valuable. Wildlife corridors can be defined as a linear landscape feature of sufficient width and buffer to allow animal movement between two patches of comparatively undisturbed habitat, or between a patch of habitat and some vital resources. Regional corridors are defined as those linking two or more large areas of natural open space, and local corridors are defined as those allowing resident animals to access critical resources (food, cover, and water) in a smaller area that might otherwise be isolated by urban development.

Wildlife corridors and habitat linkages are essential in geographically diverse settings for the sustenance of healthy and genetically diverse animal communities. At a minimum, they promote colonization of habitat and genetic variability by connecting fragments of like habitat, and help sustain individual species distributed in and among habitat fragments. Habitat fragments, by definition, are separated by otherwise foreign or inhospitable habitats, such as roadways or urban/suburban tracts. Isolation of populations can have many harmful effects and may contribute significantly to local species extinction.

Regulatory Implications

Natural resources are protected under the mandates of numerous federal, state, and local jurisdictional laws, regulations, and ordinances and these must be considered in the early planning stages of any project. Those pertinent to the 2030 RTP include the following:

Federal

Endangered Species Act (ESA)

The ESA provides for the conservation of federally listed threatened and endangered species and the ecosystems on which they depend, by prohibiting "take" of species by public agencies or private interests. Section 7 of the ESA requires that federal agencies, in consultation with the USFWS and the National Marine Fisheries Service, use their authorities to further the purposes of the act by taking those actions necessary to ensure that any action authorized, funded, or carried out by the federal agency is not likely to jeopardize the continued existence of endangered or threatened species or result in the destruction or adverse modification of critical habitat. Incidental take of listed species may be authorized under Section 10 of the ESA for otherwise lawful activities subject to the preparation of habitat conservation plans (HCPs). Newly listed species, such as the Quino Checkerspot butterfly, may not be addressed by local planning efforts that were formulated prior to the listing of new species under the ESA. These newly listed species would be addressed by agencies such as USFWS and CDFG which may require actions such as focused surveys or specific mitigation.

Clean Water Act

Section 404 of the act authorizes the U.S. Army Corps of Engineers to issue permits, after notice and opportunity for public input, which govern the discharge of dredged or fill materials into waters of the United States. Section 401 of the act requires that projects requiring a federal license or permit (in this case, a 404 permit) to conduct any activity that may result in a discharge of a pollutant into waters of the United States obtain certification from the state (in this instance, the appropriate Regional Water Quality Control Board) in addition to the federal license or permit.

U.S. Department of Transportation Act

The Secretary of Transportation shall not approve any program or project which requires the use of any publicly owned land from a public park, recreation area, or wildlife or waterfowl refuge unless there is no feasible and prudent alternative to its use and such program includes all efforts to minimize harm.

State of California

California Environmental Quality Act

This act requires that any state or local lead agency approving a project must evaluate the environmental effects of its implementation, examine less environmentally damaging alternatives, develop mitigation for identified significant effects, and allow for public input into the process.

Endangered Species Act

This act provides for the conservation of state listed threatened, endangered, and candidate species. The act requires that state agencies, in consultation with the CDFG, use their authority to further the purposes of the act by taking those actions necessary to ensure that any action authorized, funded, or carried out is not likely to jeopardize the continued existence of endangered or threatened species. Newly listed species, such as the Quino Checkerspot butterfly, may not be addressed through recent regional planning efforts because these planning efforts were put into affect prior to the listing of some species under the ESA. Therefore, newly listed species would be addressed by agencies such as USFWS and CDFG, which may require actions such as focused surveys or specific mitigation.

Natural Community Conservation Plan

The California Endangered Species Act does not contain provisions for preparation of HCPs as does the federal act. As a result, Sections 2800-2835 were added to the California Fish and Game Code in 1991 to provide for the preparation and approval of multiple species conservation plans under the Natural Community Conservation Plan (NCCP). NCCPs are intended to preserve local and regional biological diversity, reconcile urban development and wildlife needs, and meet the objectives of both the state and federal endangered species acts. As currently envisioned, the plans would have components similar to those required in an HCP prepared under the federal Endangered Species Act. Other plans involving federally listed species would be designed to meet the requirements of a federal 10(a) permit for the taking of a listed species.

Streambed Alteration

Sections 1601-1603 of the California Fish and Game Code require formulation of an agreement with the CDFG for any activity that would substantially divert or obstruct the natural flow or substantially

change the bed, channel, or bank or any river, stream, or lake designated by the CDFG or use any material from streambeds.

Local Jurisdictions

The 2030 RTP planning area contains many local jurisdictions and lead agencies that regulate development within their geographic boundaries. A number of these have specific ordinances or regulations that address the protection of biological resources above and beyond that required by CEQA. An example of this would be the City of San Diego's MSCP and Resource Protection Ordinance (RPO), which identify sensitive biological resources, determine allowable impacts or encroachment, and provide for the formulation of mitigation measures. The City's MSCP and RPO apply to City-sponsored public works projects, such as arterial and other road and utility improvement, as well as private development projects. Other local agencies (the county, for example) exempt public benefit projects from their resource protection ordinance when such projects meet specific exemption criteria. They also do not apply to federal or state transportation projects.

Regional Resource Planning Efforts

Inadequacies related to single-species management mandated by state and federal laws, combined with continued urbanization and agricultural development in the 2030 RTP planning area which is regulated by independent lead agencies, have resulted in the recognition of a critical need for large-scale, multijurisdictional comprehensive resource planning. These planning efforts can occur under the umbrella of the NCCP legislation. Since the preparation of these regional planning efforts, species have been listed as threatened or endangered, such as the Quino Checkerspot butterfly. Because these species would not have been addressed under the regional planning efforts, agencies such as CDFG and USFWS would require actions such as focused surveys or mitigation measures to ensure compliance with the Endangered Species Act. These efforts are briefly summarized below.

Multiple Species Conservation Program (MSCP)

The MSCP is a cooperative effort by the City of San Diego and 13 other jurisdictions in southwestern San Diego County to implement a regional habitat conservation plan. The MSCP is the NCCP for the area, consistent with the federal ESA Section 4(d) rule that defines conditions under which "take" of a species could occur without violations of the ESA. The MSCP creates a new process for the issuance of federal and state permits and other authorizations under the federal and state ESAs and the state's NCCP.

The City of San Diego adopted a Subarea Plan in March 1997 to guide implementation of the MSCP within its boundaries. The USFWS and CDFG approved the Plan, and the agencies and the City of San Diego executed an Implementing Agreement for the MSCP on July 17, 1997. The City's Subarea Plan delineates MHPA boundaries and contains policies and directives for each MHPA subarea. MHPAs are largely composed of core biological resource areas and regional linkages leading to biological core areas within existing reserves and parks. The current status of MSCP subarea plans in the San Diego region is summarized in Table 4.10-2. Regional habitat conservation planning areas are illustrated in Figure 4.10-2. These boundaries do not reflect the "preserved" lands, instead they reflect the large developed and undeveloped areas being addressed in the planning documents.

Multiple Habitat Conservation Program (MHCP)

The North County Wildlife Forum was formed in 1991 as a mechanism for exchanging information about, and coordinating the preparation of, local conservation plans in the northern portion of the San Diego region. Members of the forum include the cities of Carlsbad, Encinitas, Escondido, Oceanside, San Marcos, Solana Beach, Vista, and SANDAG. The U.S. Marine Corps at Pendleton, USFWS, Caltrans, and CDFG are also participating in the forum to ensure compatibility with federal and state requirements. A draft was submitted for public review in December of 2001. It is expected to be finalized in early 2003. Each individual jurisdiction has or will create a subarea plan.

San Dieguito River Valley Regional Open Space Park Plan

In June 1989, the County of San Diego and the cities of Del Mar, Escondido, Poway, San Diego, and Solana Beach formed a joint powers authority to plan, establish, and operate an open space greenbelt and park system in the San Dieguito River valley. The goal is to preserve open space, protect natural and cultural resources, create a scenic trail system, and establish recreation areas within the 55-mile river valley. A concept plan has been prepared to provide a framework for park planning, habitat conservation, and land acquisition within the viewshed of the river valley and its tributary canyons.

Least Bell's Vireo HCPs for the Sweetwater, San Diego, and San Luis Rey Rivers

In 1986, SANDAG initiated a planning effort for the least Bell's vireo in San Diego County that resulted in HCPs for the Sweetwater, San Diego, and San Luis Rey Rivers. These plans were submitted to the USFWS in 1990-1991, subsequently revised, and resubmitted in late 1992.

Table 4.10-2
Current Status of MSCP Subarea Plans in the San Diego Region

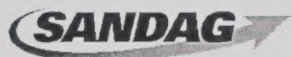
MSCP Subarea Plan	Description
City of Chula Vista MSCP Subarea Plan	Covers approximately 57,828 acres. Will preserve approximately 9,201 total acres. Completion of plan expected in 2002.
City of Coronado MSCP Subarea Plan	Addresses coastal lands and biological communities along the Silver Strand Peninsula. Will preserve 250 acres. Adopted in 1995.
City of Del Mar MSCP Subarea Plan	Focus on six areas with significant resources, primary in the southern area of the city. Draft has not yet been submitted.
City of El Cajon MSCP Subarea Plan	Draft subarea plan has been prepared, but has not been submitted to wildlife agencies for final review and approval.
City of La Mesa MSCP Subarea Plan	Remaining habitat in the subarea consists largely of coastal sage scrub and all losses will be mitigated elsewhere. Approved in 1999
Cit of Poway MSCP Subarea Plan	HCP/NNCP Subarea Plan provides for incidental take coverage for 43 plant and animal species. Encompasses 35,000 acres and establishes a 13,300 acre mitigation area. Approved in 1996.
City of San Diego MSCP Subarea Plan	Subarea plan encompasses 206,124 acres. The MHPA is approximately 56,831 acres of which 90 percent will be preserved for biological purposes.
City of Santee MSCP Subarea Plan	Subarea encompasses 10,650 acres, over half of which is developed. Plan seeks to conserve 2,300 acres. Draft plan has not been submitted for wildlife agency review and approval.
County of San Diego MSCP Subarea Plan	County area is located in the eastern part of subregion. Encompasses 252,132 acres of which 101,268 acres will be conserved. Approved in 1998.
North County MSCP Subarea Plan	County lands formerly in MHCP have been redefined as part of North County Subarea. Anticipated to be provided for review in 2003.

Source: CDFG 2002

Note: The jurisdictions of Lemon Grove, Imperial Beach, and National City have not initiated the development of MSCP Subarea Plans.

**Figure 4.10-2
HABITAT
CONSERVATION
PLANNING AREAS**

0 2.5 5 10 15
Miles



Marine Corps Base
Camp Pendleton

Fallbrook
Weapons
Annex

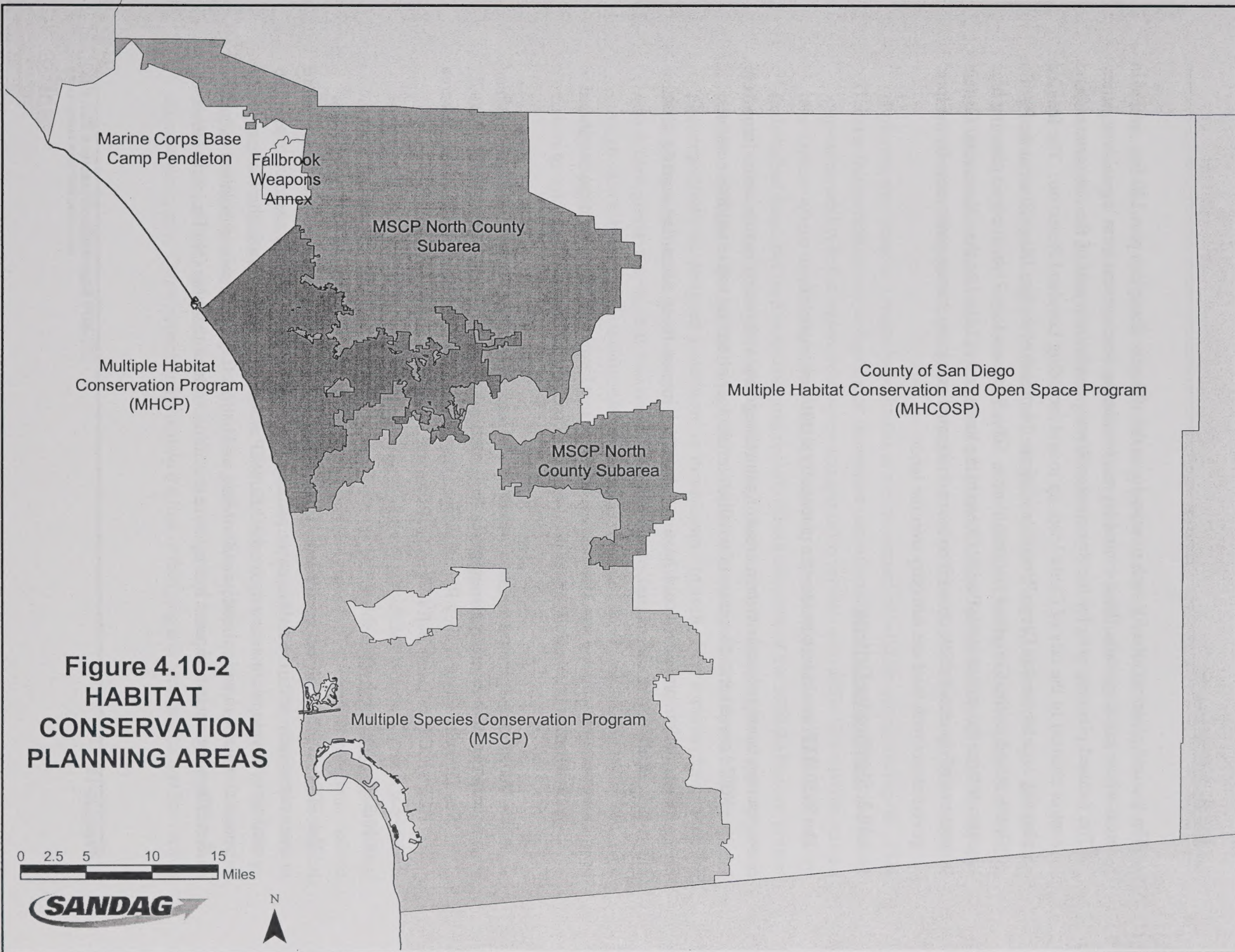
MSCP North County
Subarea

Multiple Habitat
Conservation Program
(MHCP)

County of San Diego
Multiple Habitat Conservation and Open Space Program
(MHCOSP)

MSCP North
County Subarea

Multiple Species Conservation Program
(MSCP)



The focused planning area for each river includes the 100-year floodplain plus 150 feet, except in areas where existing roads, flood control levees, or existing development form logical boundaries. The focused planning area for the Sweetwater River extends from east of the Sweetwater flood control channel in the city of Chula Vista up to and including Loveland Reservoir. The focused planning area for the San Diego River extends from the mouth of the San Diego River at the Pacific Ocean inland to the Cleveland National Forest. The San Luis Rey River focused planning area extends from the mouth at the Pacific Ocean to the lower end of Lake Henshaw Reservoir. Certain portions of riparian habitat on each river are designated as habitat management areas by the local governments with land use authority over the lands.

4.10.2 Significance Criteria

The 2030 RTP would be considered a potentially significant impact if:

- transportation projects occur in areas of natural vegetation, resulting in substantial impacts to wildlife movement, disruption of wildlife corridors, or effects on native wildlife nurseries;
- transportation projects would have a substantial impact to an identified aquatic resource (i.e., riparian, riverine, coastal, or wetland habitat);
- transportation projects would impact a substantial area located near, or within the designated or known habitat of, a special-status plant or animal species, and/or;
- if transportation improvements result in substantial encroachment into any defined comprehensive resource planning area (e.g., the focused planning area of the MHPA, MHCP, San Dieguito River Valley Regional Open Space Park Plan, Carlsbad HMP, Poway Subarea HCP/NCCP, or Least Bell's Vireo HCPs for the Sweetwater and San Diego Rivers).

4.10.3 Impact Analysis

The 2030 RTP is based on the smart growth scenario which focuses on compact, more environmentally sensitive development patterns with shorter trips and less need for trips. The patterns of development necessary for the 2030 RTP would consolidate growth, therefore, reducing potential impacts to native habitats and wildlife, and habitat fragmentation and isolation within the San Diego region as compared to the future condition without this plan (No Project). However,

future growth over the nearly 30 year planning period, coupled with the various transportation improvements necessary to accommodate that growth, would result in some conversion of undeveloped land and impacts to biological resources.

Construction of new highways, road widenings, new HOV lanes, or interchanges for existing facilities, may directly impact native habitat and wildlife, including sensitive plant and wildlife species and wetlands, through displacement and loss of habitat. Adverse effects to wildlife may also result from ongoing noise, light, glare, air pollution, and polluted runoff after the facilities are built.

Highways may present a major impediment to the movement of wildlife across the region. This habitat fragmentation and disruption of movement can substantially impact wildlife populations' long-term viability in the region. Major new transportation projects such as SR 11 would introduce a new feature where none exists now. SR 905 and SR 125 would be new facilities in relatively undisturbed areas, but both would be constructed without adoption of the 2030 RTP so the project impact is the incremental widening of each facility. Although impacts to regional open space and wildlife movement would occur through the implementation of the 2030 RTP, the NCCP regional planning efforts are designed to mitigate for these losses. In each of the subarea plans within the 2030 RTP study area, the goal is to preserve as much contiguous open space by directing mitigation into a core preserve area, thus maximizing the potential to maintain viable wildlife movement through each subarea. Additionally, each subarea plan contains specific goals and guidelines, such as the incorporation of design features including bridges and large culverts in order to minimize effects to wildlife movement.

Arterial road improvements may also result in impacts to habitat, sensitive species, and wetlands. Because the improvements are usually made to existing alignments, the level of impact is reduced relative to major new alignments or highway projects.

New transit facilities and operations may have potentially significant biological impacts to native vegetation and wetlands. Impacts could result from the Oceanside to Escondido double-tracking, and the Sorrento Mesa and Kearny Mesa grade separated transitways. Grade separations, habitat loss, fill in wetlands, noise, light, and human presence around transit stations may create biological impacts. Implementation of the double-tracking initiative along the coastal corridor would result in impacts to the lagoon systems throughout the San Diego region as well as coastal bluff habitat. Impacts would include the direct and indirect permanent impact to coastal salt marsh and other wetland habitats through the construction of bridge pilings and the associated shading effects from the new structures. Other impacts may include the loss of foraging and breeding habitat for various

animal species. In the coastal area, the I-5 corridor would also be widened so each of the lagoons would have bridge, shading, and construction effects and the crossings for both rail and freeway. These impacts would be considered significant.

Transit improvements in the 2030 RTP would include increased bus service and the introduction of new flex trolleys that would utilize existing highways and roads. The proposed flex trolleys may also be developed on dedicated new roadways. These transit enhancements would result in minimal biological impacts because most of the improvements occur along existing roadway and transit facilities. Impacts could occur to biological resources as a result of the dedicated new roadways if these improvements disturb sensitive habitat or species. These impacts would be evaluated at the project-specific level and feasible mitigation measures are expected to reduce impacts to below levels of significance.

The expansion of new bike paths that occur outside existing streets or roadways has the potential to directly impact native habitats and sensitive wildlife. These potential impacts can be avoided by surveys of the alignments and modifications to avoid sensitive areas or areas actively used for nesting during construction. Bicycles generally do not require a wide corridor, and careful design can avoid significant impacts in most areas. Development of bikeways through sensitive areas would require environmental review on a project-by-project basis, and it appears likely that significant impacts to biological resources could be avoided.

4.10.4 Significance of Impacts

Large-scale transportation projects would potentially result in an impediment to wildlife movement and habitat fragmentation can substantially impact long-term viability of wildlife populations in the region.

Direct impacts from new transportation facilities (highway, rail) could be potentially significant and adverse to sensitive habitats, plants, and wetlands. Adverse indirect effects to wildlife may also result from noise, light, glare, air pollution, and polluted runoff after facilities are built.

The biological impacts that may occur with the I-5 widening and Coastal Rail double-tracking along coastal lagoons and bluffs from Oceanside to San Diego is considered to be a significant impact.

4.10.5 Mitigation Measures

Future actions to implement specific transportation projects are subject to project-specific CEQA and NEPA review for impacts to biological resources. Identified significant impacts to biological resources would be subject to project-specific mitigation.

Listed below are general mitigation strategies that could be applicable at the project-specific level to reduce impacts from transportation projects:

- Bio-1 Design projects to minimize or eliminate impacts to natural habitats and known sensitive species. Large contiguous areas of habitat shall be avoided to reduce fragmentation of remaining habitat areas.
- Bio-2 Provide for continued movement of ground-level wildlife across rights-of-way, where there are designated wildlife corridors through the use of appropriately sized bridges or other openings where roads or transit features would create barriers.
- Bio-3 Provide off-site mitigation contiguous with areas of like resources to maximize the biological value of the habitat provided as mitigation. These efforts shall be coordinated with resource agencies and regional habitat conservation and planning efforts such as the MSCP and the MHCP.
- Bio-4 Where possible, avoid impacting oak woodlands, vernal pools, estuaries, lagoons, and other regionally and locally significant biotic resources; where unavoidable, replace with equal or better quality habitat to ensure no net loss of the resource.
- Bio-5 Where possible, avoid alteration of streambeds and associated riparian vegetation; where unavoidable, replace with like quality or better habitat at a ratio required by regulatory agencies with the goal of no net loss to wetlands.
- Bio-6 Preserve open space areas identified in local, state, and federal plans.
- Bio-7 Remove only as much vegetation and disturb only as much wildlife habitat as is absolutely necessary for grading. Revegetate with native plants where appropriate. Staging areas shall be located in previously disturbed areas.

- Bio-8 Schedule construction to avoid or minimize impacts to wildlife (e.g., avoid breeding season for sensitive species).
- Bio-9 Use appropriate water pollution control technology and best management practices to minimize or eliminate impacts to downstream aquatic systems.

4.10.6 Residual Impacts

Impacts to wildlife corridors and most direct and indirect impacts from roadway and transit improvements could be mitigated to below a level of significance. Although mitigation for impacts along the entire coastal corridor may exist through enhancement of lagoons, including in areas outside the San Diego region, the effectiveness of these measures to achieve no net loss are unknown at this programmatic level. There is the potential for significant unmitigable impacts.

4.11 CULTURAL RESOURCES

Cultural resources in the San Diego region include archaeological sites of prehistoric or historic origin, or standing structures with national, state, or local significance. These resources and applicable regulations are discussed below.

4.11.1 Existing Conditions

The prehistoric period spans the long (approximately 10,000-year) duration of Native American presence culminating with colonial claim to this area by the Spanish in 1769. The beginning of the historic period saw the passing of two transitions, the Spanish and Mexican, until statehood introduced the American period. Evidence of prehistoric through American period activities is preserved in sites throughout the San Diego region and represents one of our most valuable historic assets.

The cultural resources associated with these various periods are composed of structures or sites of historical or archaeological interest. These may include districts, buildings, objects, landscape elements, sites, or features that reflect human occupation of this region.

Prehistoric

Since the passage of CEQA and subsequent adoption of regional standards for environmental review, cultural resource discovery and evaluation have increased at an extraordinary rate. There are over 14,000 recorded archaeological sites in the San Diego region with most recorded since the early 1970s. The central database is maintained by the South Coastal Information Center and is continually updated. From a general perspective, this large number of sites indicates that the region saw long-term and apparently successful occupation by Native American groups. It should also be noted that the urbanization of large portions of the region prior to regular cultural resource evaluation prevented the discovery and recording of many sites.

The earliest inhabitants of the region are typically identified by two labels: the San Dieguito and the La Jolla. Approximately 1,500 years ago, Yuman culture patterns from the California deserts significantly influenced the coastal indigenous peoples. The Late Prehistoric inhabitants were present at the time of European exploration and colonization in the 16th and 18th centuries. It is this period of European contact with the local inhabitants that defines the boundary between the

prehistoric and historic periods of San Diego County's culture history. During the last 220 years, culture change within the county has been rapid. Three governments have claimed and occupied the region and each has impressed its own character on the subsequent development of the cultural landscape.

The San Diego region can be divided into two basic natural and cultural resource areas: the coastal region of beaches, lagoons, coastal river valleys, and coastal mesas and the inland region of foothills, valleys, and deserts. Early coastal archaeological sites are typically identified and labeled as La Jolla, while the early inland sites are most often labeled San Dieguito. Late Prehistoric Yuman sites are found throughout the county and can be identified by the presence of ceramics and a stylistic variation in the lithic tool kit.

San Dieguito and La Jolla

Shellfish refuse accumulates and over time becomes a buried deposit called a shell midden. These midden deposits are the result of marine resource exploitation by people in that area. A radiocarbon test of the organic shell material will provide a date for a particular sample. Radiocarbon dates on shell from coastal sites have revealed that some deposits are as old as 9,000 years. Artifacts located with, below, or above the dated sample in an undisturbed midden are considered contemporary, older, or younger than the sample, respectively. This technique of relative dating using stratigraphy is common in archaeological investigations.

Artifacts associated with early coastal sites typically include tools for processing seeds, fibers, and shellfish. Some decorative items, such as shell or stone beads, have been found; however, these items are somewhat unusual in San Diego region assemblages. Cutting and crushing tools of flaked stone are also found at these coastal locations. Cutting tools are made from stones gathered locally and fashioned to provide a functional tool for short-term use, rather than a specialized tool designed to become part of a specialized tool kit, as is often the case in inland sites.

Prehistoric sites found inland can rarely be dated using techniques as accurate as those employed in shell midden sites. Only in special cases is enough shell or other suitable organic material found at an inland site to provide a sample of sufficient size and without contamination. Because of this limitation, it is necessary to rely on stratigraphic associations between artifacts to determine the approximate age of deposits. However, oftentimes stratigraphic associations are problematic because the majority of archaeological sites have little stratigraphic integrity due to historic

disturbances and bioturbation. Many inland sites consist of scattered artifacts lying on the ground surface. This situation relies on even more generalized dating.

Stone tools recovered from inland sites appear to be elements of well-made, specialized tool kits. This differs from what appear to be expediently made and generalized tools that are associated with coastal midden sites. Differences between sites in the two geographic areas are evident in material selection and tool form. These differences suggest a preconceived idea of the finished tool, rather than utilization of a random flake or core that may fulfill a need without requiring extensive reworking.

Finer, flaked cutting tools and tools for creating them are found more often in sites located inland. These artifacts are different in both material and manufacture from more recent Late Prehistoric and historic period stone tools. La Jolla/San Dieguito tool kits are almost exclusively composed of local volcanics and metavolcanics. Typical inland sites consist of scattered tools, flakes, and flake waste. Occasionally, grinding surfaces on bedrock outcrops are associated with early inland sites, but these tools suggest opportunistic use, as opposed to the well-used grinding tools from many coastal sites.

Although lithic artifacts are present in both Early period (9,000-2,500 years before the present) and Late Prehistoric sites, their characteristics are not reliable time markers. Ceramics are the most obvious indicators of the Late Prehistoric culture pattern. Fragments of ceramic vessels are extremely durable and indicate a clear difference between the aceramic San Dieguito/La Jolla pattern and the Late Prehistoric period. As a clear point of difference, they may also be used as an element for establishing a relative stratigraphic date for an archaeological deposit.

Late Prehistoric

Differences in the lithic tool kit mentioned earlier are another identifiable characteristic of the Late Prehistoric. Flaked stone tools, especially projectile points, are made of high-quality local materials such as quartz and extremely fine-grained metavolcanics. Imported materials from outside the region are often used. These include obsidian from Coso and Obsidian Butte, as well as chalcedony from many areas of southern California.

A difference in ground stone tools (including the addition of bedrock mortars) is also typical of Late Prehistoric sites. These special-use grinding or processing locales are often associated with oak

woodlands. Used to process plant materials, the bedrock elements described as slicks, basins, and mortars are easily identified by their pocked and polished surfaces.

As evidenced by this discussion it is clear that the prehistoric record within the region is extensive and complex. As mentioned above, the existing conditions within the large project area with regard to prehistoric cultural resources indicate that the likelihood of sites, features, or isolates within the western San Diego region is high and that concentrations or clusters of sites or other resources occur along valleys, on terraces, and in proximity to estuaries and embayments.

Historic

Spanish Period (1769-1822)

The beginning of the historic period for the San Diego region is generally accepted as 1769. Although there was contact with Spanish explorers as early as 1542, it was not until 1769 that colonial forces occupied this territory and claimed it for Spain. This action brought about the beginning of the Spanish period and saw the gradual acculturation of all aboriginal peoples in this area. Through the development of a series of missions and presidios, Spain laid claim to most of California. The first of the Alta California missions was founded on July 16, 1769, on a hill overlooking San Diego Bay. This mission later moved east, into present-day Mission Valley, to the site of a large Kumeyaay village known as Nipaguay. The Presidio remained at the original location, above the area that would later be known as Old Town.

The Spanish period spans the years from 1769 to 1822 and, with the exception of archaeological elements in the Old Town area, the Presidio and Mission San Diego de Alcalá, the Mission San Luis Rey, Padre Dam and Flume, and several poorly preserved adobe structures within the region, there are not many remaining elements of this period. It is known that a number of family ranchos were established during this period; however, little remains of these early settlements. It is also possible that elements of Spanish period sites and structures were incorporated into later building efforts.

Mexican Period (1822-1848)

The Mexican period (1822-1848) retained many of the Spanish institutions and laws; however, in 1834 the mission system was secularized. This allowed for increased Mexican settlement, but also meant that many Native Americans were dispossessed. After secularization, large tracts of land

were granted to individuals and families, and a rancho system was established. Cattle ranching dominated the agricultural activities and the development of the hide and tallow trade with the United States increased during the early part of this period. The Pueblo of San Diego was established at this time and Native American influence greatly declined. The Mexican period ended when Mexico ceded California to the United States after the Mexican-American War (1846-1848).

American Period (1848-present)

During the American period, in addition to cattle and sheep ranches, a growing number of farms appeared. A rural community cultural pattern existed in the region from approximately 1870 to 1930. This pattern consisted of communities made up of population aggregates that lived within well-defined geographic boundaries, shared common bonds, and cooperated to solve shared problems. They lived, not in small towns or villages, but on farmsteads, tied together by a common school district, church, post office, and country store (Hector and Van Wormer 1986). These farmsteads and dispersed farming communities gave way to horse ranches, dairies, and nurseries, which in turn were replaced by the establishment of the roadside service complex. The roadside service industry thrived in the highly mobile, mechanized pre- and post-war society, which was linked by state and federal roadways.

Gradually the enclaves of population grew into the communities and cities that make up the region today. In the years 1880-1905, with increased railroad access, San Diego grew and a commercial district developed, in conjunction with the shipping trade in the lower, Fifth Avenue section of downtown. There are numerous buildings in this portion of downtown that have been designated as local, state, and federal historic sites.

Regulatory Framework

There are approximately 250 registered historic landmarks recorded in the San Diego region. This includes sites, structures, features, or districts that are on the National Register of Historic Places, the California State Landmarks list, and County and City of San Diego Historic Landmarks lists. This does not necessarily include information from the numerous historic inventories that have been conducted by the cities of Carlsbad, Oceanside, Encinitas, National City, Chula Vista, La Mesa, and El Cajon. Within the city of San Diego, there are many district or community planning areas that have been inventoried for historic properties. These include the El Cortez study area; Sherman Heights; Bayside; the Core study area Harbor View; east end Barrio Logan; Mission Hills/Presidio Hills study area; downtown survey area (7th, 8th, 9th, 10th, 11th, 12th, G, K, E, Imperial, Broadway,

and Island Streets); Barrio Logan and western Southeast San Diego; Grant Hill; and Centre City East.

In the last several years a number of communities and cities have begun to inventory the resources that are present to develop management plans and standards for their protection. This has become more often the case as urban areas are limited in their choices of undeveloped land and instead move towards adaptive reuse of existing buildings and features of the built environment.

There are numerous statutes that apply to the evaluation, protection, and preservation of historic properties (including archaeological sites). The federal legislation is the Antiquity Act of 1906, Historic Sites Act of 1935, Reservoir Salvage Act of 1960, National Archaeological/Historic Preservation Act 1966 (Section 106), 1983 Department of Transportation Act Section 303 (4F), and the NEPA. For the state of California, the legislation includes California Public Resources Code Section 5097.5, California Penal Code Title 14, Part I, and CEQA. In addition, as mentioned above, a number of cities have instituted cultural resource standards or guidelines for treatment of resources. All of these issues must be addressed on a project-by-project basis and with the necessity of determining the lead agency.

4.11.2 Significance Criteria

The 2030 RTP would have a potentially significant impact if it:

- caused a substantial adverse change in the significance of a historical or archaeological resource beyond those anticipated under No Project Conditions; or
- disturbs any human remains, including those interred outside of formal cemeteries.

4.11.3 Impact Analysis

Major new transportation projects identified in the 2030 RTP, including highway widening and transit facilities, which could impact significant prehistoric or historic properties. This is a particularly high possibility for new highways, such as SR 11, or highways widened in less developed areas. Rail alignments, bikeways, border crossings, and transit stations could also impact archaeological sites. Intensification of land uses along established transit corridors in older portions of the cities where structures of architectural or historical significance are located, such as the Mid-

City corridor, could result in historic impacts. The FHWA and Caltrans have responsibilities under Section 106 of the National Historic Preservation Act and Section 4F of the Department of Transportation Act to identify significant properties and to avoid or minimize adverse effects from highway projects. Other local jurisdictions have responsibilities to identify and avoid adverse effects to significant cultural resources under CEQA.

Implementation of the 2030 RTP which assumes smart growth strategies as the basic land development pattern, would lead to the conversion of less land to urban uses when compared to the No Project (i.e., future land use buildout under current plans). This, in turn, would likely result in fewer impacts to archaeological and historic sites relative to existing plans and policies.

4.11.4 Significance of Impacts

Individual project actions under the 2030 RTP would need further evaluation to determine the significance of impacts prior to project approval. Potential impacts are typically avoided by surveys of the alignments and design modifications to avoid potential archaeological and historic sites. Impacts to cultural resources are considered mitigable through the general measures discussed below and future project-specific environmental review.

4.11.5 Mitigation Measures

Implementation of the 2030 RTP, including future development of highways, transit, and bicycle facilities, would be required to comply with federal, state, and local regulations and procedures for the protection and evaluation of archaeological, historic, and heritage properties. Preliminary inventories along project corridors will be used to identify the kinds of resources that may be encountered within the corridor. For federal or state projects, a Memorandum of Understanding/Memorandum of Agreement (MOU/MOA) needs to be entered into with the State Office of Historic Preservation. Any testing or data recovery will be undertaken after preparation of a research design that will outline relevant goals and procedures to be followed. Involvement of Native Americans or others who may have a heritage interest in the resources will be included in the resource investigations or evaluations.

The following general measures are considered applicable for the mitigation of cultural resources:

- Cult-1 Where feasible, the project shall implement design measures to avoid archaeological or historical resource areas or areas identified as having significant heritage values to living peoples.
- Cult-2 Preservation of important cultural or scientific sites by capping with fill, asphalt, or some other material to preserve their contextual setting shall be considered.
- Cult-3 Areas of cultural or scientific resources shall be monitored during the grading phase.
- Cult-4 Archaeological and historical resources shall be salvaged through data sample recovery programs.
- Cult-5 All specimens collected shall be archived at an appropriate institution.

4.11.6 Residual Impacts

Mitigation measures are anticipated to reduce the loss of significant cultural resources to below a level of significance at this planning level stage of analysis.

CHAPTER 5.0

CUMULATIVE IMPACTS

Cumulative impacts are those impacts which by themselves are not significant but, when considered with impacts occurring from other projects in the vicinity, would result in a total or cumulative impact. As defined in the CEQA Guidelines, a cumulative impact results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable projects. While an EIR should discuss the "severity and likelihood of occurrence" of cumulative impacts, "the discussion need not provide as great detail" as the discussion of the proposed project's effects but "should be guided by the standards of practicality and reasonableness" (CEQA Guidelines Section 15130). In addition, reasonable mitigation measures should be discussed. However, CEQA acknowledges that "with some projects, the only feasible mitigation for cumulative impacts may involve the adoption of ordinances or regulations rather than the imposition of conditions on a project-by-project basis."

This section examines the program level cumulative effects that may occur if development proceeds over the 2030 RTP planning period as allowed by existing land use designations and zoning, the smart growth land use strategies assumed for the 2030 plan, adopted habitat conservation plans, and other region-wide plans and regulations developed for the protection of water resources, air quality, etc.

5.1 CUMULATIVE IMPACTS

The following discussion is based on the assumption that regional population growth will be generally consistent with the 2030 Regional Growth Forecast (SANDAG 2002b). A cumulative impacts discussion is provided below. In summary, the 2030 RTP would be expected to reduce regional transportation/circulation impacts that would otherwise be expected to occur if the 2030 RTP, including smart growth land use assumptions, were not implemented. Cumulatively significant land use, noise, biological resources, water resources, and visual resources impacts may not be mitigable to a level below significance. Cumulative impacts to geology/paleontology and cultural resources are expected to be reduced to a less than significant level through incorporation of minimum standard mitigation measures and additional site specific measures that would be identified during subsequent project-specific environmental review.

Several environmental documents related to transportation improvements included in the 2030 RTP have already undergone public review. These documents were considered during preparation of this draft EIR and include documentation for the construction of SR 56 between SR 56 west and SR 56 east (City of San Diego, LDR No 95-0099, SCH No. 96031039), SR 125 South, between Otay Mesa and Spring Valley in San Diego County (Caltrans project), SR 125/54 (Caltrans), and City of Villages (City of San Diego CDR No. 40-1027, SCH No. 2001061069).

Land Use

Cumulative significant impacts could result from implementation of 2030 RTP improvements and other cumulative development and highway projects throughout the region if these projects are not in conformance with the adopted land use plan or zoning requirements. Implementation of sensitive design measures, including provision of buffers between incompatible land uses, changes to the adopted plan and zone, or implementation of other mitigation measures identified for specific project actions on a case-by-case basis could reduce potentially significant cumulative impacts to a less than significant level.

Implementation of the 2030 RTP would contribute to an incremental increase to the loss of regional open space and agricultural areas. Projects proposed by the 2030 RTP along with other regional projects would construct new facilities outside the currently urbanized core and into areas of open space and agriculture. In particular, planned and proposed projects, such as the SR 11, SR 125 and SR 905 corridors in the Otay Mesa area, would result in a substantial change to currently vacant land and open space areas. The 2030 RTP is based on an anticipated smart growth future land use pattern and would focus on improving mobility in the more dense nodes of urban development, rather than continued expansion into rural areas. However, certain projects included in the 2030 RTP, such as the ones listed above, would be located in areas of existing open space and more rural uses. The conversion of this land and loss of regional open space and agricultural lands would be considered cumulatively significant.

Social Environment

Cumulative development of the associated projects would not result in substantial, unanticipated increases in population beyond those currently projected. However, new construction and/or right-of-way acquisition associated with the combined projects could result in cumulative displacement impacts to residences and/or businesses. Project-specific measures such as relocation assistance programs would mitigate any cumulative impacts associated with displacement.

Visual Resources

Development of the 2030 RTP is considered to have a significant cumulative and unmitigable impact on visual resources. Adverse visual quality impacts, due to 2030 RTP projects or other regional projects, along new or widened highway corridors result from the creation of large, manufactured roadway slopes, noise barriers, and the loss of landscaping. Planned or proposed highways, such as SR 125, SR 905, SR 56, or SR 11, that pass through undeveloped areas would result in a significant change in the visual character of the local area.

Improvements for light rail, such as double-tracking would result in cumulative visual impacts, especially within the coastal corridor near significant visual features such as lagoons, recreational areas, regional parks, scenic vistas, etc. Even in existing urban settings, rail segments that are elevated would have a high potential for visual impact.

Mitigation measures such as landscaping and contour grading would reduce the visual contrast, but the visual changes associated with all regional projects in the area would create a significant and unmitigated cumulative impact to visual quality as the region continues to grow.

Traffic and Circulation

Development of regional projects would contribute to an overall increase in traffic volumes on the existing and planned roadway network. The purpose of the proposed 2030 RTP is to optimize the performance of the roadway and public transit systems as the region continues to grow and develop. The implementation of the project is expected to result in a less congested roadway system, increased public transit opportunities, and expanded regional bikeway corridors. The 2030 RTP would serve to improve circulation throughout the region as increases in traffic volumes continue to increase. At the program level, the project is considered to be beneficial in terms of its impact on the regional transportation system and would not add to cumulative traffic impacts across the San Diego region.

Air Quality

Cumulative impacts to air quality would result from large development projects in the region. However, the proposed policies and actions would benefit the region's air quality by helping to relieve traffic congestion and by encouraging the use of more efficient transportation methods. The

2030 RTP outlines projects which would act to reduce vehicular emissions, such as highway expansions, traffic signal improvements, transit expansion and increased operations, vanpools, HOV lanes, park-and-ride, and regional bike/pedestrian paths. The future smart growth land use pattern assumed under the 2030 RTP would support mixed-use development, facilitating alternative modes of transportation such as walking or bicycling. The mixed-use concept and concentrated urban nodes could reduce average trip distances and encourage transit use. Proposed RTP improvements to the region's transportation network would be consistent with the RAQS and SIP.

Although other past, present, and future projects would contribute to significant cumulative air quality impacts and the SDAB would remain in non-conformity for some emissions, the 2030 RTP would act to minimize, not increase, air quality emissions. The smog-forming pollutants (tons/day) would be less with the project than the No Project condition. The 2030 RTP would therefore not be considered a contributor to significant cumulative air quality impacts in the basin.

Noise

Implementation of the 2030 RTP, including proposed highway projects, transit facilities and the associated construction, when considered with all other past, present, and future projects within the region, would contribute to a cumulative increase in noise levels. Cumulative impacts are most likely to occur in the vicinity of urbanized "corridors" that have been targeted for more intensive mixed-use development and served by improved highway and transit facilities.

The proposed RTP would promote more efficient transport of people and goods into, out of, and through the region. Highway and transit improvements would accommodate increased use by trucks, buses, and trains using these facilities. This in turn would contribute to increased impacts within the transportation corridor used by each of the modes and an incremental increase to noise levels within the region.

Furthermore, decreasing highway congestion, which is a goal of the 2030 RTP, would allow vehicular traffic on freeways and major arterials to move faster. Because noise levels have been found to increase with the speed of passing traffic, programs that reduce the number of vehicles using a corridor, or allow for higher speed, could increase the noise produced by traffic and exceed significance thresholds.

Cumulative significant exterior noise impacts to existing and future sensitive receptors could be reduced or avoided by construction of noise barriers, installation of supplemental insulation, or similar measures such as double-paned windows for new structures to reduce or avoid impacts.

Energy

Overall energy consumption in the San Diego region is inevitable with an increasing population and continuing region wide development. Though some new project development outlined in the 2030 RTP would cause energy usage to increase, the 2030 RTP outlines projects that would create new or improved highways that reduce traffic congestion, facilitate smoother traffic flows, and provide routes that are more direct. This in turn could decrease travel time and distance and, consequently, decrease fuel usage by individual vehicles and overall energy consumption could be reduced.

Proposed transit improvements in the 2030 RTP also encourage optimized use of public transportation which provides a more energy efficient mode of travel than single-passenger vehicles, thereby reducing the region's transportation energy consumption rate. Implementation of the 2030 RTP, including discussions related to bicycle, goods movement, congestion management, air quality, and energy, also contribute to a reduction in regional energy consumption.

Though certain components of the 2030 RTP may increase overall energy consumption, the purpose of the Plan is to develop a regional transportation network that would operate efficiently and encourage the use of transit as the San Diego area continues to grow. For these reasons, the 2030 RTP would not increase cumulative energy impacts.

Geology/Paleontology

The entire San Diego region is susceptible to impacts from seismic activity. Although seismic activity can cause damage to substandard construction, new designs can significantly reduce potential damage. Earthquake-resistant designs employed on new structures minimize the impact to public safety from seismic events. Portions of the 2030 RTP transportation network and many other cumulative projects would be constructed through geologic formations susceptible to slope failure and project-specific geotechnical investigations would be necessary to design measures to avoid slope failure. As such, all projects, both proposed in the 2030 RTP and throughout the region are required to meet certain safety design features which reduce potential geological impacts.

The implementation of the 2030 RTP and other regional projects would result in disturbance of geologic formations with moderate to high paleontological resource potential through the San Diego area. At the project-specific level, paleontological surveys would be required to determine the resource value for impacted areas. Monitoring by a qualified paleontological monitor would also be a project-specific requirement in all those project areas where any grading would occur in formations of moderate to high resource potential and would reduce any cumulative impacts to regional paleontological resources.

Water Resources

The 2030 RTP, when considered with all other cumulative projects, would result in significant cumulative impacts to hydrology and water quality from increased runoff and the transport of waterborne contaminants. Construction projects throughout the region would result in increased erosion from exposed soil areas, which contributes to sediment-laden runoff into local drainage courses. Erosion can be destructive to the immediate area and sedimentation can clog waterways and downstream wetland and lagoon areas. Measures incorporated into future projects would decrease erosion. These include limiting the grading to the dry season and immediate stabilization of manufactured slopes. These measures to reduce erosion during construction would be combined with long-term measures, such as installation of sedimentation basins to reduce the erosion potential. In addition, runoff from urban areas can also degrade downstream water quality. Though the water quality impacts resulting from the 2030 RTP would be mitigated to below a level of significance, the incremental contributions of all regional project are considered cumulatively significant.

Conformance with existing federal, state, and local regulations for grading and the protection of water quality, combined with implementation of BMPs, as discussed in Chapter 4.9 (Water Resources) of this EIR, would lessen this impact. The increased runoff from impervious surfaces to lagoons and other water bodies, along with pollutants carried by the runoff, would result in a cumulative significant impact, which is not completely mitigable.

Biological Resources

Because undeveloped land is often less expensive to acquire and develop, past, present and reasonably foreseeable future projects are likely to target undeveloped areas within the region. Implementation of these projects would contribute to the cumulative loss of sensitive habitats throughout the San Diego region, along with the projects outlined in the 2030 RTP. Of particular concern are the potential loss of coastal sage scrub, wetlands and associated habitat, lagoons, native and non-native grasslands, and southern mixed chaparral. These resources contain a variety of sensitive plant species and provide habitat for sensitive wildlife species. The loss of large open blocks of these habitats or resources would contribute to cumulatively significant impacts.

While much of the development proposed in the 2030 RTP is targeted toward already urbanized areas and away from rural lands, some improvements would impact sensitive habitat and undeveloped open space, especially in the southern portion of the region. The cumulative loss of these habitats from the proposed and all other cumulative projects would be considered a cumulatively significant impact.

Preservation of the region's biological resources is being addressed through the implementation of the regional habitat plans (MSCP, MHCP, or other habitat conservation plan). These plans focus efforts on the region's predominant habitats (Diegan coastal sage scrub, riparian woodland, southern mixed chaparral, non-native grassland, and southern oak woodland), providing for preservation in large, contiguous areas of habitat in perpetuity. Sensitive resource areas would be managed, restored, and/or revegetated for long-term persistence through implementation of the applicable habitat conservation plan. The conservation of open space and restoration or enhancement of disturbed habitat provided by implementation of the MSCP, MHCP, and other plan guidelines and mitigation required of proposed projects would serve to lessen the potential cumulative biological impacts to a level below significance. Cumulative impacts to native grasslands would remain significant since the habitat is not significantly conserved.

Loss of any riparian (wetland) habitat is considered cumulatively significant and not potentially mitigable. The individual impacts of projects, such as double-tracking across lagoons could be mitigated; however, there is potential that this impact may not be below a level of significance. These impacts add to the cumulative wetland impacts throughout the region and would be cumulatively significant.

The indirect and cumulative impacts to native habitat and wildlife would likely be more significant than the direct impacts that may result from development of the highway and transit facilities alone. Direct impacts from highway projects would be mitigated through the measures outlined above. Ongoing air, noise, light, and water pollution to sensitive wildlife are considered significant and not fully mitigable.

Cultural Resources

Any loss of historic or prehistoric resources from the combined proposed project and past, present, and reasonably foreseeable future projects, including the 2030 RTP would contribute to cumulatively significant impacts to cultural resources, depending on location. Cumulative impacts could be reduced to a less than significant level or avoided by mitigation measures identified in Chapter 4.11 (Cultural Resources) of this document along with any mitigation outlined during project-specific analysis.

CHAPTER 6.0

OTHER CONSIDERATIONS REQUIRED BY CEQA

This chapter contains an evaluation of Environmental Justice as well as other considerations required under CEQA.

6.1 ENVIRONMENTAL JUSTICE

The issue of environmental justice addresses the relationship of projects and resulting impacts to minority populations and low-income populations. Its evaluation is dictated by both federal and state guidelines. The regulatory setting is described below followed by an analysis consistent with those guidelines.

Regulatory Requirements

Closer examination of minority and low-income populations is guided in part by Sections 65040.2 and 65040.12 of the California Government Code which requires the Office of Planning and Research (OPR), to adopt guidelines for addressing environmental justice matters in city and county general plans when it adopts the next general plan guidelines, but in no case later than July 1, 2003. Environmental justice is defined as “the fair treatment of people of all races, cultures, and incomes with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations, and policies.” Specifically relevant to the 2030 RTP, OPR must recommend provisions, propose methods for planning for the equitable distribution of new public facilities and services that increase and enhance community quality of life throughout the community, given the fiscal and legal constraints that restrict the siting of these facilities. They also must propose methods for promoting more livable communities by expanding opportunities for transit-oriented development so that residents minimize traffic and pollution impacts from traveling for purposes of work, shopping, schools, and recreation.

The California statute also anticipates that entities will review and evaluate information from federal analysis of environmental justice under the auspices of federal Executive Order (EO) 12898 (Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations). That EO directed each federal agency toward “identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations.”

Specific sections of this executive order address research and data collection issues, subsistence consumption of resources concerns, and fostering public participation in federal processes among populations typically under-represented in the public process. The California statute does not contain these specific provisions, and speaks to fair treatment rather than assessing disproportionately high and adverse impacts. However, given the review and evaluation provision, it is assumed that assessment of disproportionality of adverse impacts is warranted in the spirit of the California directive. Therefore, to facilitate the environmental justice analysis, relevant baseline demographic data on minority and income status were mapped and then contrasted to local, county, and other regional average baseline data to identify relevant high minority and low-income areas.

According to federal guidelines, minority groups include the following populations, Black or African American, American Indian or Alaskan Native, Asian, and Native Hawaiian or Other Pacific Islander. Additionally, persons of Hispanic ethnicity (of any race) are also considered to be a minority group. SANDAG compiles data and prepares projections for the following racial and ethnic groups: Hispanic (of any race), and Non-Hispanic White, Black, or Asian/Other. For the purposes of this analysis, Hispanic (of any race) Black, and Asian/Other groups were classified as minority, consistent with established SANDAG practice.

The most useful data source for evaluating demographic data for this transportation planning project is the Traffic Analysis Zone (TAZ). A TAZ is a geographic unit used by transportation planners to forecast travel. A variety of data is segregated into these units including population, ethnicity, and age. They are based on census data, but do not necessarily match census tracts.

To help determine the future location and size of minority populations within the region, the percentage of the projected minority population for the entire region in 2030 was first calculated. The Interagency Federal Working Group on Environmental Justice (IWG) states that a “minority population” may be present in an area if the minority population percentage in the area of interest is “meaningfully greater” than the minority population in the general population. In 2030, 59 percent of the region’s population is projected to be minority and 41 percent non-minority. For the purposes of this analysis, those future 2030 TAZs with a minority population of at least 65 percent (a figure proportionally at least 10 percent higher than the regional average of 59 percent), were classified as minority populations. Using this methodology, 61 percent of the region’s total projected minority population in 2030 is located within minority TAZs.

The region median household income in 2030 is projected to be \$70,500 (in today’s dollars). For the purposes of this analysis, low-income TAZs were defined as those where at least one third of the

households are projected to have a 2030 income of less than \$35,000 per year (in today's dollars). This methodology resulted in approximately 25 percent of the total number of the region's households classified as being located within low-income TAZs.

6.1.1 Existing Conditions

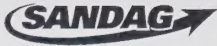
The San Diego region is an ethnically and racially diverse region. Census 2000 data showed that minority populations comprised 43 percent of the total population. Persons of Hispanic ethnicity represented 27 percent of the population, whereas Non-Hispanic Black/African American and Non-Hispanic Asian/Other populations represented 5.5 percent and 13 percent of the total population, respectively. In order to conduct the following analysis on both a regional and sub-regional level. The region's transit and roadway networks have been grouped into 5 multi modal traffic corridors that roughly encompass the regions major transportation routes: North County Coastal, North County Inland, Central San Diego, South Bay and Border Areas.

As shown in Figure 6.1-1, year 2000 low-income population distribution by TAZ, though fewer in number, showed a similar distribution to the minority TAZs. Low-income TAZs are mainly located within the Central San Diego (Cities of San Diego, Lemon Grove, El Cajon, and Santee), the South Bay (Chula Vista, National City), and Border Areas corridors. Within North County, the low-income TAZs were clustered within the Cities of Escondido, Vista, San Marcos, and Oceanside.

As shown in Figure 6.1-2, the year 2000 distribution of minority populations by TAZ within the region was clustered most prominently within the Central San Diego, South Bay and Border Areas corridors. Specifically, minority TAZs were mainly located within the southern section of the City of San Diego, Lemon Grove, and across large areas of National City, eastern Chula Vista, and Imperial Beach. Further north, minority TAZs were mainly located within the North County Inland corridor, specifically within the Cities of Escondido, San Marcos, Vista, and eastern parts of Oceanside. To a lesser extent, limited minority TAZs were located within the North County Coastal corridor including small areas of western Oceanside and isolated minority TAZs within coastal Del Mar and Solana Beach. Relatively isolated clusters were also present within the Mira Mesa area of the city of San Diego and a number of larger but sparsely distributed areas within the East County corridor.

The distribution of low-income populations by TAZ in 2030 are generally forecast to diminish substantially across the entire region (Figure 6.1-1). This change is most pronounced within the Central San Diego and South Bay corridors, but is also apparent within the North County Inland

Figure 6.1-1
LOW INCOME POPULATION
BY TRAFFIC ANALYSIS ZONE
(2000 AND 2030)
October 2002



MILES
0 3 6 9
KILOMETERS
0 4.8 9.6 14.4

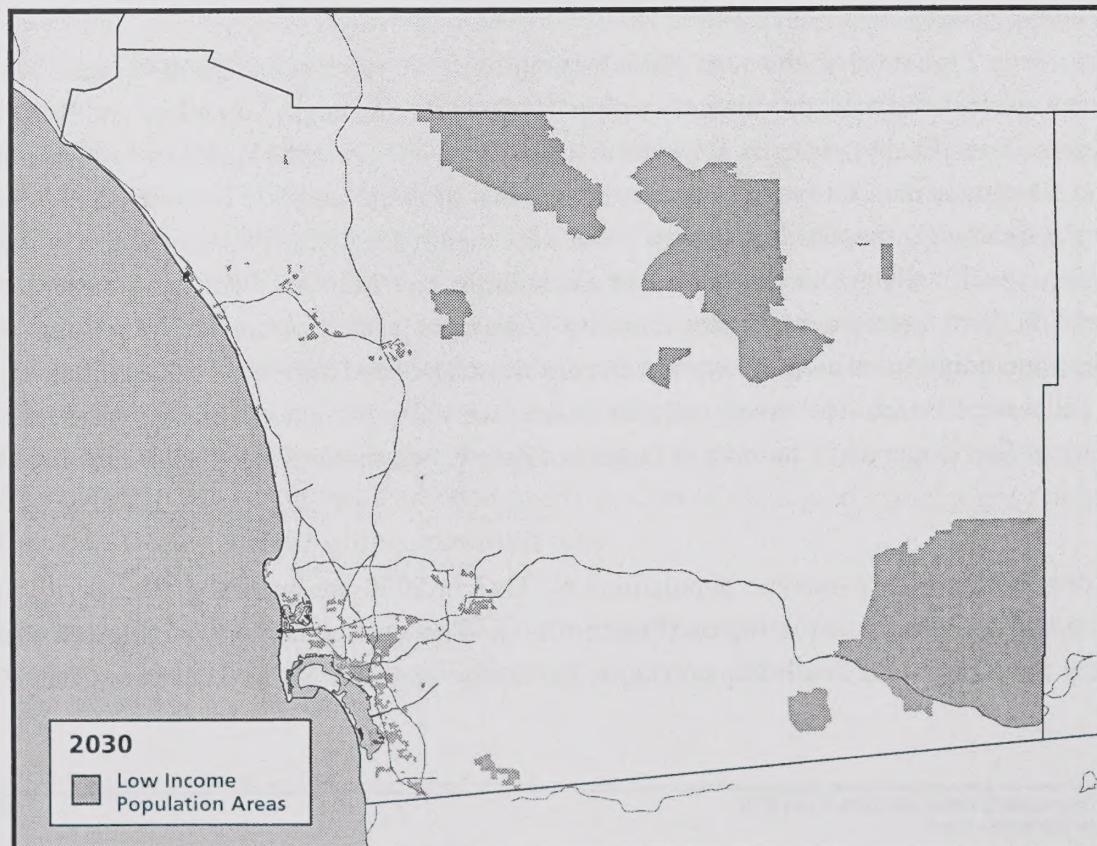
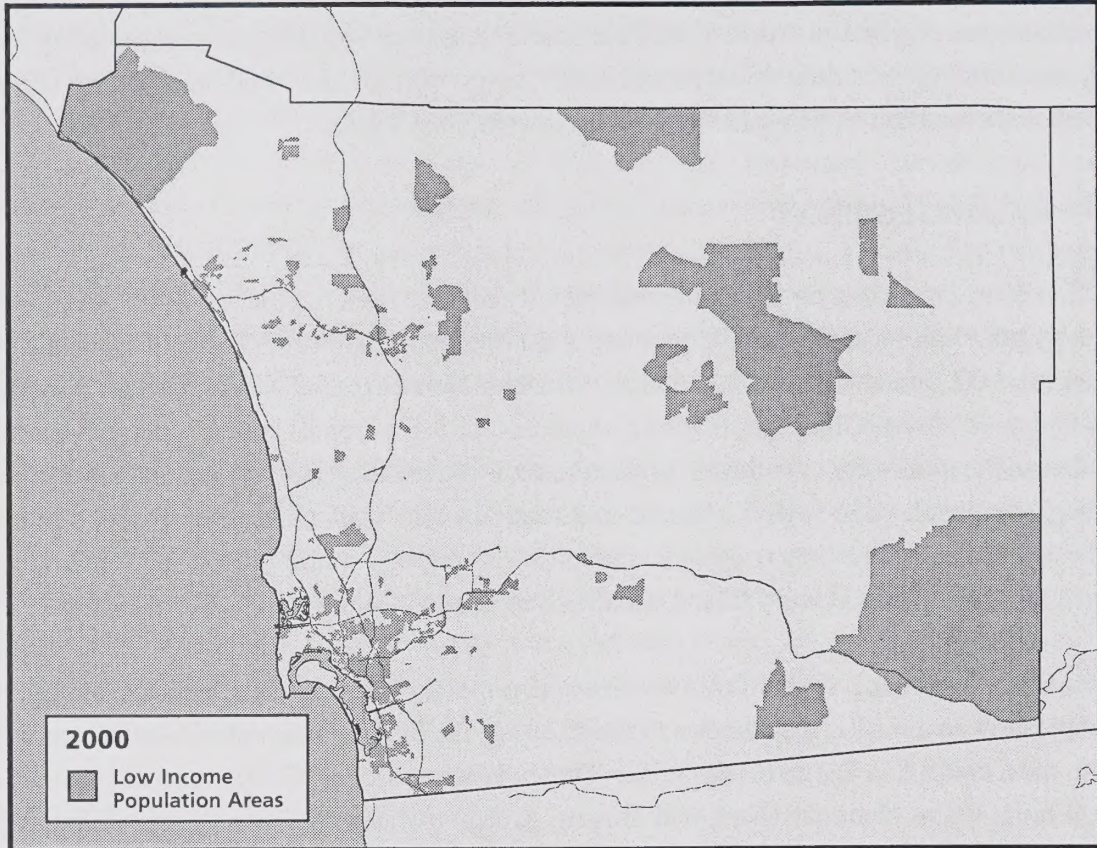
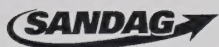
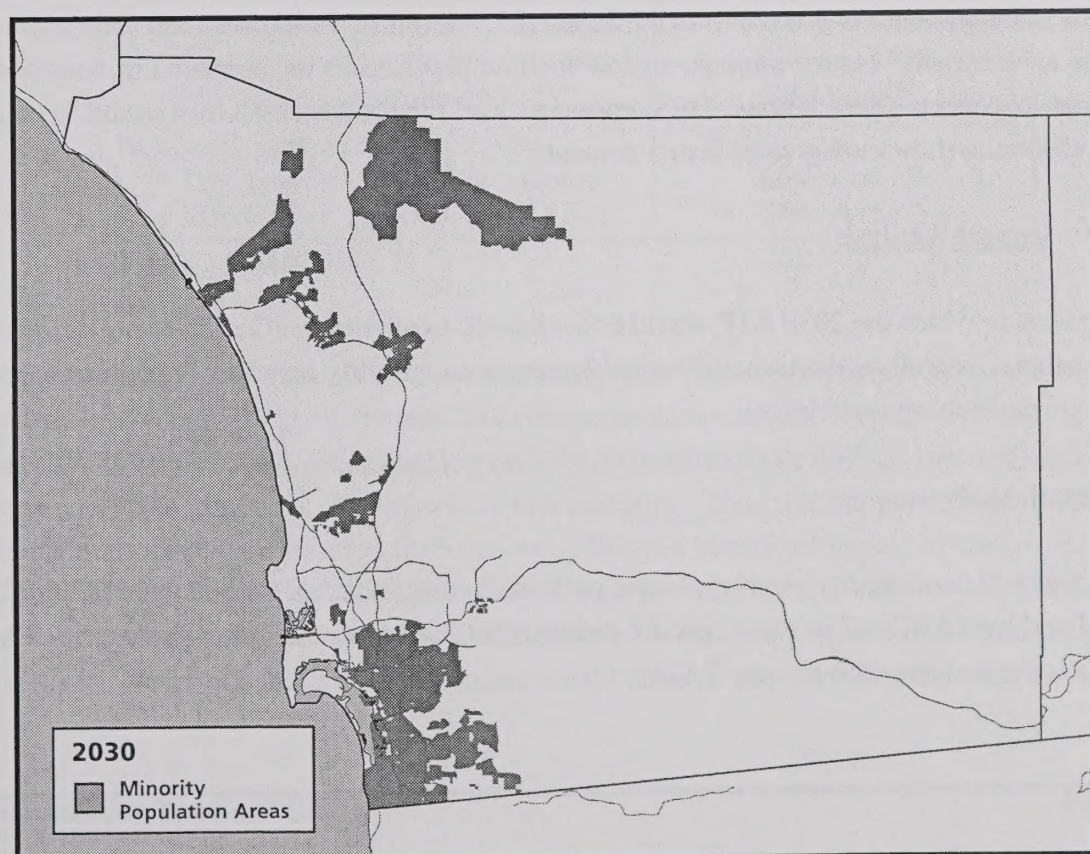
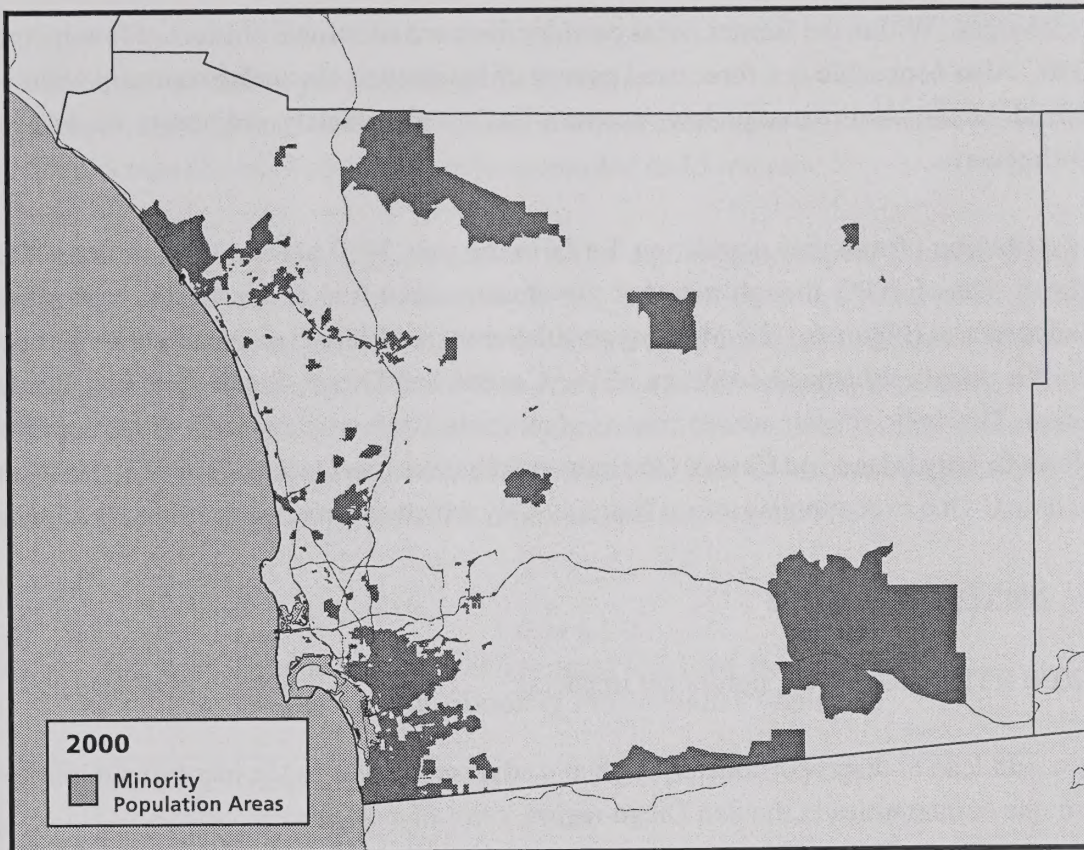


Figure 6.1-2
MINORITY POPULATIONS
BY TRAFFIC ANALYSIS ZONE
(2000 AND 2030)
October 2002



MILES
0 3 6 9
KILOMETERS
0 4.8 9.6 14.4



percent of the non-minority populations would meet this measure. Here, minority populations are projected to receive a slight benefit. An estimated 60 percent of low income TAZs would achieve this performance measure while for non-low income TAZs, the percentage would be 67. In this category, the non-low income TAZs would have greater access. This is the only performance measure among the four related to trip availability where the low income or minority population would not have parity with the non-low income or minority population. Overall, both minority and low income TAZs would benefit equitably from implementation of the 2030 RTP.

Sub-Regional Analysis

As shown in Figures 6.1-1 and 6.1-2 and described in Table 6.1-2, discernable clusters of both low-income and minority TAZs are present in each of the defined traffic corridors. These clusters are projected to be situated mainly within the central San Diego and South Bay corridors and to a lesser extent, the North County corridors. Further, within each corridor, the low-income and minority TAZs are predominantly clustered within cities or existing urban areas (Figures 6.1-1 and 6.1-2). As shown in Table 6.1-2, the 2030 RTP would allow populations within all of the transportation corridors to benefit from improved transit services and highway networks.

As a result of the 2030 RT, multiple transit (regional and local) and highway improvements would be located within all of the transportation corridors. Further, the adjacency of the identified minority and low-income populations to said improvements, allowing adequate access the mobility-based benefits of the plan, would facilitate an equitable level of service with the surrounding communities. No disproportionately adverse impacts related to equity of service provided by the proposed transportation improvements would occur to the minority and low-income communities within any of the regional transportation corridors examined.

Other Impacts

As outlined above, low-income and, to a slightly lesser extent, minority populations within the region are generally located within or adjacent to existing transportation corridors, correlating with the relative lower land or housing costs available in those locations. As such, many of the proposed transportation improvements would unavoidably occur within close proximity to these populations. There remains the potential for disproportionate impacts from the proposed transportation improvements related to noise, air quality, or displacement of populations, residences, and businesses.

**Table 6.1-2
Sub-Regional Analysis**

	North County Coastal	North County Inland	Central San Diego	South Bay	Border Areas
Location of low-income and minority populations	Smaller clusters within western Oceanside and coastal Carlsbad. Isolated TAZs within coastal Del Mar and Solana Beach.	Dispersed clusters within eastern Oceanside and the cities of Vista, San Marcos, and Escondido.	Clusters present within the cities of San Diego, El Cajon, Lemon Grove, and Santee	Large clusters within the cities of National City, Chula Vista, and Imperial Beach	Large clusters within southern sections of the cities of Chula Vista, and Imperial Beach.
2030 RTP Transit & Highway Services	<u>Regional transit</u> Improved coaster service	<u>Regional transit</u> - Oceanside to downtown San Diego Coaster; - Escondido to downtown San Diego	<u>Regional transit</u> Peak period service to/from El Cajon, Santee via SR 52	<u>Regional transit</u> All-day service via I-805/I-15	<u>Regional transit</u> All-day service via I-805/I-15
	<u>Local transit</u> Oceanside to Escondido	<u>Local transit</u> - Oceanside to Escondido, - Escondido and Oceanside to downtown San Diego	<u>Local transit</u> - Santee, El Cajon, Lemon Grove to downtown San Diego	<u>Local transit</u> San Diego/international border	<u>Local transit</u> San Diego/ international border
	<u>Highway</u> I-5 (freeway with managed lanes to downtown San Diego) SR 78 (freeway to Escondido linking to I-15 to downtown San Diego)	<u>Highway</u> - SR 76 (conventional highway/ expressway) - Oceanside to I-15 I-5, I-15 (freeway with managed lanes to downtown San Diego) - SR 78 (highway to Escondido)	<u>Highway</u> - SR 52 (freeway with managed lanes) - SR 94, I-805 (freeway with HOV lanes) - I-15 (freeway with managed lanes and movable barriers)	<u>Highway</u> - I-5, SR54 (freeway with HOV lanes) - I-805 (freeway with managed lanes) - SR 125 (toll road with HOV lanes)	<u>Highway</u> - SR 11 / SR 905(general purpose freeway lanes) - I-5, SR 54 (freeway with HOV lanes) - I-805 (freeway with managed lanes) - SR 125 (toll road with HOV lanes)
Access and availability for low-income and minority populations	Equitable distribution of transportation improvements as measured by 2030 RTP performance goals	Equitable distribution of transportation improvements as measured by 2030 RTP performance goals	Equitable distribution of transportation improvements as measured by 2030 RTP performance goals	Equitable distribution of transportation improvements as measured by 2030 RTP performance goals	Equitable distribution of transportation improvements as measured by 2030 RTP performance goals

These impacts are by their very nature, highly localized. In order to accurately ascertain any potential disproportional impact, analysis will be required at the project level. Subsequent project-specific environmental review would be completed per CEQA and NEPA, as applicable, to further analyze the proposed improvements to determine if air quality, noise-related, or displacement impacts would occur.

6.1.4 Significance of Impacts

The 2030 RTP would provide an equitable level of service for both minority and low-income populations. No disproportionate adverse impacts related to equity of service would occur to the low-income and minority populations identified for the San Diego region. Therefore, no significant environmental justice impact would occur with implementation of the 2030 RTP.

6.1.5 Mitigation Measures

Because there would be no significant impacts, no mitigation would be necessary.

6.1.6 Residual Impacts

There would be no significant impacts prior to mitigation, so there would be no adverse residual impacts after mitigation.

6.2 SIGNIFICANT ENVIRONMENTAL EFFECTS WHICH CANNOT BE AVOIDED IF THE PROPOSED PROJECT IS IMPLEMENTED

Implementation of the 2030 RTP would result in significant irreversible environmental impacts which could not be avoided by the project in eight of the eleven issue areas evaluated in this EIR. Unavoidable impacts would occur in the areas of Land Use, Social Environment, Visual Resources, Noise, Geology/Paleontology, Water Resources, Biological Resources, and Cultural Resources. Implementation of the 2030 RTP would not be able to avoid these impacts.

Mitigation measures included in this EIR and measures outlined in individual project-specific environmental analysis would mitigate many impacts to below a level of significance. However, significant impacts in the area of Visual and Biological Resources would not be mitigated to below a level of significance. These impacts would be significant, unavoidable, and unmitigable.

6.3 SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL CHANGES WHICH WOULD BE CAUSED BY THE PROPOSED PROJECT SHOULD IT BE IMPLEMENTED

Implementation of the 2030 RTP would result in permanent changes to the existing environment that have been recognized in other sections of this EIR. The conversion of undeveloped and agricultural land to urbanized uses is considered a permanent change. The conversions would occur directly through construction of new facilities on undeveloped land, and indirectly through development of surrounding lands which could not have occurred without construction of new transportation facilities such as SR 11. Construction of new projects in undeveloped areas would create increased human activity, traffic, and noise.

Biological habitat fragmentation could occur with the construction of linear transportation facilities including both highway and fixed rail alignments. Adverse effects to wildlife from noise, light, and glare associated with traffic on a new roadway or transit alignment could occur. These changes would be irreversible.

The 2030 RTP is based on smart growth land use policies which focus future growth near existing urban areas. This consolidated land use pattern would result in densification along high volume and potential transit corridors and stations. This identification of higher density could change community character and create a demand for the development of new infrastructure, services, schools, parks, and other community facilities in the affected areas.

Besides the commitment of land to urban uses, implementation of projects recommended in the 2030 RTP would involve the consumption of energy derived from nonrenewable sources, such as fossil and nuclear fuels. Building materials could be considered permanently consumed, although these might be recyclable in part at some future date.

6.4 GROWTH INDUCING IMPACT OF THE 2030 RTP

A project is defined as growth inducing when it directly or indirectly fosters economic growth, population growth, or additional housing; when it removes obstacles to growth; and/or when it encourages or facilitates other activities that could significantly affect the environment. Growth inducement is generally dependent on the presence or lack of existing utilities and municipal or public services. The provision of roadways, utilities, water, and sewer service to a previously unserved area can induce growth by removing impediments to development. Once services are extended into a project area, economic pressures to develop are anticipated. In addition, growth

inducement also can be defined as growth that makes it more feasible to increase the density of development in surrounding areas.

Overall, the 2030 RTP is designed to serve the planned growth for the region through a smart growth land use scenario. Based on the discussion above, some of the land use policies and new transportation facilities recommended in the 2030 RTP could be defined as growth inducing. Smart growth policies encourage higher density residential uses, employment centers, and mixed-use development adjacent to transit centers and transit corridors. The 2030 RTP also encourages the construction of new transit centers. Siting the highest density uses near transit facilities would encourage more efficient use of mass transit and could reduce some vehicle miles traveled, reducing energy consumption and air pollutant emissions. Therefore, the growth-inducing impacts of these policies would be primarily beneficial. More intense growth could create land use impacts if the new higher intensity development is not designed to be compatible with surrounding existing development.

Development in outlying areas of the urbanized part of the county could result in longer commute lengths and increased vehicle miles traveled. This could have an adverse impact on air quality and energy consumption. However, these new highway segments would also relieve congestion on existing roads, which would reduce energy consumption and emissions of air pollutants.

Policies in the 2030 RTP would encourage transit- and pedestrian-friendly development throughout the region. Managed HOV lanes throughout the region promote and encourage ridesharing. Locations along the new southern segment of SR 125 from Otay Mesa to SR 54 have been identified for potential rail transit stations. Provision of mass transit in these corridors would make it easier for people in new developments to use alternative modes of transit.

The 2030 RTP focuses on transportation policies given an assumed level of growth that will occur with or without implementation of its policies and actions. These policies work towards reducing the impact of growth on the region and providing beneficial improvements to regional transportation geared towards smart growth development patterns.

6.5 EFFECTS NOT FOUND TO BE SIGNIFICANT

Implementation of the 2030 RTP would not create a significant impact in the issue areas of Transportation/Circulation, Energy, Air Quality, and Environmental Justice. Any project impacts affecting these two issue areas would not be significant and would not require mitigation.

6.6 MANDATORY FINDINGS OF SIGNIFICANCE

The CEQA Guidelines require a discussion of Mandatory Findings of Significance (§15065). There are four subsections to this requirement. The exact CEQA language is provided for greater detail.

- a) *Does the proposed action have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or pre-history?*

Section 4.10 of the EIR discusses the potential impacts to biological resources. There is the potential for impacts to biological resources, including impacts to sensitive plant and wildlife species through the loss of open space, loss of habitat, and direct construction activity impacts. These potential impacts, except for those associated with coastal lagoons, could be mitigated to below a level of significance and would not result in substantial loss of habitat, cause a population to substantially drop, or eliminate a plant or animal community. Given the programmatic nature of this EIR, it is currently unknown whether mitigation measures such as enhancement of lagoons or mitigation replacement measures would achieve a no net loss of habitat along coastal lagoons. Therefore, the project has the potential to degrade and/or threaten the habitat of fish or a wildlife species. Section 4.11 describes the potential for impacts to cultural resources. This section concludes that there is the potential to impact cultural resources. However, mitigation would reduce this impact to below a level of significance and therefore, the 2030 RTP would not eliminate important examples of California history or prehistory.

- b) *Does the proposed action have the potential to achieve short-term, for the disadvantage of long-term, environmental goals?*

The 2030 RTP works to meet the region's long-term mobility needs, to better connect transportation and land use policy decisions, and to create a transportation network that would serve the region through the year 2030. The project does not attempt to meet short-term goals, but rather design a plan that would continually improve the San Diego region's transportation system as it is implemented. The 2030 RTP is based on a smart growth land use distribution scenario which involves a compact, efficient, and environmentally sensitive pattern of development by focusing future growth away from rural areas and closer to existing and planned job centers and public

facilities. This type of land use pattern would avoid future environmental impacts that could result from sprawling development.

- c) *Does the proposed project have impacts that are individually limited, but cumulatively considerable? (“Cumulatively considerable” means that the incremental effects of a proposed action are considerable when viewed in connection with the effects of probable future proposed actions).*

The proposed project would result in cumulatively considerable impacts to visual resources, noise, water quality, biological resources, and land use, as disclosed in Chapter 5.0 of this EIR.

- d) *Does the proposed action have environmental effects which will cause substantial adverse effects on human beings either directly or indirectly?*

The majority of impacts discussed in the EIR would be mitigated to below a level of significance. The 2030 RTP would result in potentially significant impacts to visual quality, resulting generally from the alteration of the existing visual environment and the potential. Though this is considered a significant environmental impact, the change in visual characteristics of an area would not result in substantial adverse effects on human beings either directly or indirectly.

CHAPTER 7.0

ALTERNATIVES

The CEQA Guidelines require that an EIR evaluate a "reasonable" range of alternatives to a proposed project or a program. Further, these alternatives should "feasibly attain most of the basic objectives of the project." Under CEQA "feasible" means that the alternatives are "capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors" (Cal. Code Regs., Title 14, § 15364). The EIR need not analyze the alternatives at the same level of detail that it analyzes the project itself, but it must analyze the comparative merits of the alternatives.

The CEQA Guidelines also outline the range of alternatives that the EIR must evaluate. All EIRs must analyze the No Project alternative. In this EIR, the No Project Alternative analyzes the future environmental implications of not adopting the 2030 RTP. The other alternatives depend on the type and setting of the project, as well as the project goals and objectives. The range of the alternatives is governed by the "rule of reason." This means that an exhaustive analysis of every possible alternative is not warranted, instead the focus is on considering a reasonable range of alternatives that will "foster informed decision making and public participation" (Cal. Code Regs., Title 14, § 15126.6(a)). The EIR should focus on alternatives that reduce or eliminate the identified impacts of the proposed project, even if those alternatives would not achieve all of the project objectives or would be more costly. Where alternatives themselves would result in significant impacts, those impacts must be identified.

Finally, the CEQA Guidelines also requires each EIR to identify the environmentally superior alternative. If the No Project alternative is found to be environmentally superior, then the EIR must select another from among those analyzed.

7.1 ALTERNATIVES CONSIDERED

This EIR considers five alternatives to the proposed 2030 RTP. These include (1) No Project, (2) Transit Emphasis Alternative, (3) Highway Emphasis Alternative (Smart Growth), (4) Highway Emphasis Alternative (Current Plans) and the (5) Revenue Constrained Alternative. The No Project Alternative is required by CEQA. The other alternatives have been generated by SANDAG in the RTP process as alternate means of achieving the goals and objectives of the 2030 RTP. The overall

goal is to meet the region's long-term mobility needs by better connecting transportation and land use policy decisions, thereby creating an appropriate transportation network while preserving, to the extent possible, the San Diego environment and quality of life. As noted in Section 2.3, SANDAG has identified seven goals for the 2030 RTP. The number one goal is mobility, that is, moving people and goods, not just vehicles, as well as better managing congestion.

The alternatives below were derived to reflect distinct differences with respect to investment, mobility, and environmental effects and allow SANDAG decision-makers with a range of choices regarding the future transportation system of the San Diego region. The respective alternatives are described below and Table 7-1 identifies some key transportation network characteristics of the alternatives. For comparison, information is also provided for the existing 2000 condition and the proposed 2030 RTP (proposed project).

Table 7-1
Key Network Characteristics of Proposed Project and Alternatives

Proposed Project and Alternatives	System Capacity					
	Total Freeway Lane Miles	Carpool Lane Miles (subset of total freeway)	Arterial Lane Miles	Transit Revenue Miles	Systemwide VMT (in millions)	Daily Transit Passenger Miles (in millions)
Existing (2000)	2,205	27	2,065	91,755	74.7	1.7
Proposed Project	3,038	486	2,688	280,547	112.4	5.1
No Project	2,455	77	2,688	90,316	109.9	2.3
Transit Emphasis	2,672	302	2,688	372,740	109.0	5.8
Highway Emphasis (Smart Growth)	3,355	93	2,688	160,578	115.3	3.4
Highway Emphasis (Current Plans)	3,348	93	2,688	160,578	123.6	3.5
Revenue Constrained	2,824	436	2,688	121,484	112.3	3.2

VMT = vehicle miles traveled

As noted in the introduction, CEQA requires identification of alternatives that would reduce or eliminate identified impacts of the proposed project. Based on the analysis in Chapter 4.0, there

would be significant or potentially significant impacts in the areas of land use, social environment, visual impacts, noise, geology/paleontology, water resources, biology and cultural resources. Of these issues, impacts would be reduced to below a level of significance after mitigation for all but visual quality and biological resources. These impacts generally result from the construction of new features and widening of existing roadways, particularly in or near sensitive areas. However, if new transportation features are not constructed and impacts to land based resources are completely avoided, then there would be impacts from increased congestion and worsening of air quality. Additionally, if SANDAG does not adopt a regional transportation plan it would be in violation of federal law. Accordingly, this alternatives analysis has two alternatives (No Project and Transit Emphasis) that would reduce impacts to land based resources such as biology, geology/paleontology, cultural resources because they would involve construction of fewer freeway miles and less widening of freeways as compared to the proposed project. For a full range, this section also considers two Highway Emphasis alternatives which focus on increasing highway opportunities for automobiles with minimal focus on transit.

No Project Alternative

The No Project Alternative, as required by CEQA, addresses the potential effects of developing only the baseline network of transportation projects (highway, transit, local roadway, bicycle and pedestrian) that are considered committed projects. These projects are identified in the Fiscal Year 2002 Regional Transportation Improvement Program (RTIP) or have otherwise committed funding.

Table 7-2 lists the key transit and highway improvements under this alternative.

Table 7-2
Major Highway and Transit Improvements
No Project Alternative

HIGHWAYS NETWORK			
	Route	Location/Project	Facility
1	I-5/SR 78	Widen North to East Connector	Connectors
2	I-5/I-805	Genesee Ave to Del Mar Heights Road	Freeway Widening
3	I-5	Mission Bay Drive to SR 52	Auxiliary Lanes - Northbound
4	I-8	2 nd Street to Greenfield Drive	Auxiliary Lanes - Eastbound
5	I-15	Miramar Way to Mira Mesa Blvd	Auxiliary Lanes

	Route	Location/Project	Facility
6	I-15/SR 56	Loop Ramp (East to North) and I-15 Widening	Connector and Freeway Widening
7	I-15	Citracado Parkway to Valley Parkway	Auxiliary Lanes
8	I-15	SR 56 to Centre City Parkway	Managed Lanes
9	SR 52	SR 125 to SR 67	New 4 Lane Freeway
10	SR 56	Camino Ruiz to Black Mountain Road	New 4 Lane Freeway
11	SR 56	Carmel Country Road to Camino Ruiz	New 4 Lane Freeway
12	SR 125	Fletcher Parkway to Grossmont Drive	New 6 Lane Freeway
13	SR 125	Elkelton Blvd to SR 94	New 6 Lane Freeway
14	SR 125	SR 54 to SR 94	HOV Lanes
15	SR 125	San Miguel Road to SR 54	New 4 Lane Freeway
16	SR125/SR54	Briarwood Rd to Elkelton Blvd	New 4 Lane Freeway
17	SR 125	SR 905 to San Miguel Road	New 4 Lane Toll Highway
18	SR 905	I-805 to Airway Road	New 6 Lane Freeway
19	SR 905	Airway Road to Otay Mesa Border Crossing	New 6 Lane Freeway
TRANSIT NETWORK			
	Project		
20	Oceanside-Escondido Rail		
21	Mission Valley East Light Rail Extension		

Source: SANDAG 2002a

Tables C-1 through C-3 in Appendix C provide a detailed comparison of the various roadway, freeway and transit improvements associated with each of the alternatives. As shown in these tables, the baseline network would involve some improvements but there would be fewer new roads and those that would be widened would have fewer lanes than under other alternatives. For example, in the No Project condition, SR 905 between I-805 and Mexico would be built with 4 lanes, but the proposed project would ultimately implement 6 freeway lanes between I-805 and Heritage Road. Other key transportation features such as the I-805/I-5 merge would be implemented, as well as widening of I-15, construction of SR 52 to SR 67, and construction of SR 125 from SR 905 north to SR 94 and then eventually to Grossmont Drive.

Additionally, the No Project alternative assumes a future land use scenario consistent with the smart growth plans that are currently in the process of being completed for large areas of the region. As shown in Table 7-1, by 2030 the No Project alternative would involve construction of approximately

250 freeway lane miles, 50 lane miles of which would be for carpools and over 600 lane miles of arterials. The number of transit revenue miles would decrease from the existing condition.

Transit Emphasis Alternative

Under the Transit Emphasis Alternative, funds would be spent primarily on transit capital expenses, a large part on transit operating expenses, and the remainder on transit projects in the highway system (e.g., managed lanes). Figure 7-1 (at the end of Chapter 7.0) illustrates the transit and highway/managed lanes network under this alternative. The key highway, roadway, and transit projects associated with this alternative are listed in Appendix C. As shown, extensive transit systems would cover the central urban core, link the major freeways, and extend eastward on I-8 and SR 67. This system would be based in part on trolley and fixed-rail, improvements, but would rely heavily on expansion and improvement of the mobile bus system. Transit revenue miles would be over 280,000 greater than under existing conditions, and about 90,000 greater than the next highest network. The emphasis on transit could reduce the need for parking at key attractions (e.g., shopping malls), if people were to shift away from single-occupancy vehicles. The total number of freeway lane miles would increase from existing conditions by approximately 450 lane miles, which would be greater than the No Project scenario, but less than the proposed project. Two freeway connectors would be completed; widening SR 78 north to the east and construction of the SR 56 east to I-5 northbound. Carpool lanes would increase substantially as compared to either the existing situation or No Project.

The future land use pattern is based on implementing smart growth policies.

Highway Emphasis Alternative (Smart Growth)

The Highway Emphasis Alternative would focus funds on construction of highways, while maintaining transit-dedicated funds consistent with state and federal directives. As shown in Figure 7-2 (located at end of Chapter 7.0), the Highway Emphasis Alternative would result in completion of several freeway connectors, and maximize general purpose freeway lanes with limited highway managed lanes (see also Appendix C). For example, I-5 between SR 905 and SR 54 would be improved from 8 general purpose lanes to 10 purpose lanes as compared to the proposed project which proposes 8 general purpose lanes plus 2 HOV lanes. Further north on I-5, between I-8 and I-805, the proposed project would construct 10 general purpose lanes plus 2 HOV lanes and the Highway Emphasis alternative proposes 12 general purpose lanes. Transit would focus on key corridors north-south (I-5, I-15) and east-west (I-8, SR 78). The Sorrento Mesa Transit way would

not be constructed nor would there be double-tracking of the Oceanside-Escondido rail. Other grade-separations would also not be completed. The total number of freeway lane miles would increase by over 1,100 from existing conditions, which would be approximately 300 lane miles greater than the next closest non-highway alternative (see Table 7-1). The number of carpool lane miles would be only 16 greater than under the No Project Alternative. Under this scenario, the land use pattern would reflect smart growth consistent with the 2030 RTP.

Highway Emphasis Alternative (Current Plans)

Under this alternative, the transportation network would be almost identical to the Highway Emphasis Alternative (smart growth), but the land use pattern would be different. The land use pattern difference would result in variations in performance measurements, particularly with regards to proximity to transit opportunities and employment/school, because the future growth would spread over a larger area and less focused on mixing residential/employment/educational uses. The network would be the same as shown in Figure 7-2, only the underlying land use pattern would change. This alternative is included to provide a quantifiable comparison to the same network overlaid on a different land use patterns (smart growth and current plans). Similarly, the other alternatives provide the opportunity to compare network variations with a constant land use assumption (smart growth).

Revenue Constrained Alternative

The Revenue Constrained Alternative derives a transportation network given only known funding sources and assumes flexible funding sources such as *TransNet* would not be available. Given the reduced funds, fewer capital projects would be completed by 2030. The list of key highway, roadway, and transit projects under this alternative is provided in Appendix C, and Figure 7-3 (located at the end of Chapter 7.0) illustrates the network. For example, under the Revenue Constrained Alternative, I-15 north of SR 78 would be improved by converting 2 of the 8 travel lanes to HOV lanes whereas with the proposed project 2 new HOV lanes would be added for a total of 10 lanes from SR 78 to Centre City Parkway. There would be no HOV to HOV connections at I-5/SR 78 or I-8/SR 125, nor would there be a new freeway to freeway connection at I-5/I-8. Routes 67, 78, 76, 94 and 905 would not be widened and the Kearny Mesa transit way would not be constructed, nor would the coastal rail tunnel at University City. As shown in Table 7-1, the total freeway lane miles would increase by over 600 miles from current conditions, but only about 360 more than with the No Project Alternative. This alternative would have a greater emphasis on carpool opportunities than the Highway Emphasis Alternative, but less emphasis on transit than the Transit Emphasis Alternative. The land use pattern for this alternative is assumed to be smart growth.

7.2 ALTERNATIVES COMPARISON

SANDAG may adopt any of the alternatives included in this EIR. Although federal planning regulations require that SANDAG identify a set of projects that can be delivered based on reasonably available funding (Revenue Constrained Alternative), these requirements do not preclude SANDAG from adopting a plan that includes additional projects. Possible new revenue sources may be available such as voter approval of an extension of Proposition A which authorized *TransNet* funds.

Table 7-3 illustrates some of the different characteristics of each alternative in terms of indicators linked to the seven goals for the 2030 RTP. For comparison, the same indicators are provided for existing conditions (year 2000) and the proposed project plus all of the alternatives. Table 7-4 provides a comparison of impacts by issue area for each alternative, and incorporates the information in Tables 7-2 and 7-3 as appropriate.

7.3 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

As noted, the CEQA Guidelines require each EIR to identify the environmentally superior alternative, and if the No Project alternative is so identified, then another alternative must be selected.

Table 7-5 compares the effects of the alternatives to the proposed 2030 RTP. A very basic numerical rating system has been created for this assessment. Generally, each alternative has been compared and ranked 1 through 5 as "much more favorable" to "much less favorable." The factors considered in the ranking are the numeric indicators in Tables 7.2 and 7.3, as well as the qualitative analyses in Table 7-4. This ranking is not weighted and as such it does not reflect a value system that may be more sensitive to one particular type of impact (e.g., regarding biological impacts as more important to avoid than geologic). This ranking helps to make apparent the relative differences between alternatives at a gross scale, as well as the relative similarities to the proposed project.

Based on the tables, the two Highway Emphasis Alternatives would have greater environmental impacts than the project or other three alternatives. The Transit Emphasis Alternative would be considered the Environmentally Superior Alternative of the five considered because it would have comparatively less new construction, yet it would do a better job of achieving the goals of moving people and goods than the No Project Alternative.

Table 7-3
Key Indicators of Proposed Project and Alternatives

Indicators	Existing (2000)	Proposed 2030 RTP	No Project	Transit Emphasis	Highway Emphasis (Smart Growth)	Highway Emphasis (Current Plans)	Revenue Constrained
Mobility							
Average daily travel time/trip (minutes)	14.4	15.1	15.1	15.3	14.7	15.7	14.9
Average work trip daily travel time (minutes)	24.1	25.4	26.0	31.7	24.4	26.1	25.1
Work trip average speed (peak period) in auto (m.p.h.)	28.6	28.0	24.6	26.2	29.2	28.4	27.1
Work trip average travel speed (peak period) in transit (m.p.h.)	10.1	12.7	10.6	13.3	12.0	12.3	11.6
Accessibility							
Percent of work and higher education trips accessible in 30 minutes (peak periods)	70%	67%	64%	64%	70%	65%	67%
Reliability							
Percent of daily VMT at LOS E or F (peak periods)	25%	22%	30%	24%	18%	24%	24%
Percent of daily VMT at LOS E or F (all day)	13%	12%	20%	15%	10%	13%	15%
Efficiency							
Total 30-year public and private travel costs per trip	\$1.77	\$1.70	\$1.86	\$1.80	\$2.04	\$1.90	\$1.81
Equity							
Average daily travel time							
- Low income population	n/a ⁽¹⁾	15.7	15.6	15.9	15.2	15.7	15.4
- Non low income population	n/a ⁽¹⁾	15.0	15.1	15.3	14.7	15.7	14.8

Table 7-3. Continued

Indicators	Existing (2000)	Proposed 2030 RTP	No Project	Transit Emphasis	Highway Emphasis (Smart Growth)	Highway Emphasis (Current Plans)	Revenue Constrained
- Minority population	n/a ⁽¹⁾	14.6	14.6	14.9	14.2	14.6	14.3
- Non minority population	n/a ⁽¹⁾	15.4	15.4	15.6	15.1	16.4	15.2
Livability							
Percent of homes within ½ mile of a transit stop	63%	62%	60%	62%	61%	61%	61%
Sustainability							
Total daily on-road fuel consumption (in millions)	3.9	5.9	5.8	5.7	6.1	6.5	5.9
Smog forming pollutants (tons/day)	44.6	43.5	43.7	42.7	44.4	46.3	43.8
Constrained land used for transit/highway (in acres) ⁽²⁾	N/A	129	46	51	437	437	127

⁽¹⁾ Breakdown for low income and minority populations are based on projections and traffic area zones (TAZ) for 2030 which are not comparable to 2000 TAZ.

⁽²⁾ Constrained land defined as areas with steep slopes >25 percent, open space lands including MSCP and proposed MHCP, 100-year floodway, wetlands, CNEL >65 in residential areas.
VMT = vehicle miles traveled

Table 7-4
Alternatives Comparison by Issue Area

No Project	Transit Emphasis	Highway Emphasis (Smart Growth)	Highway Emphasis (Current Plans)	Revenue Constrained
Land Use				
The No Project alternative would result in the least amount of resource land conversion since it includes the least construction. Resource land is generally open space and agricultural lands. Per Table 7-3 the loss of constrained land is estimated at 46 acres. The constrained land category includes open space and MHPA/MSCP lands, but not agricultural lands. It would not facilitate the smart growth movement in land planning across the region.	This alternative would have the next to least loss of constrained land (approx. 51 acres) because it would place a minimal emphasis on new highway and roadway construction and may require less land allocated to parking. It would have the smart growth land use pattern, but because it would not serve all of the region nor provide as many options for existing suburban commuters, the average daily travel time to work would be longest.	The two Highway Emphasis alternatives would consume the greatest amount of constrained land (approx. 437 acres), and likely land overall. The emphasis on new roads and widened roads would require a substantial amount of land and would have a greater likelihood to introduce potentially incompatible land uses.	Like the other Highway Emphasis alternative, the land area consumed would be substantial. With the current plans land use pattern, existing sprawl would continue to grow and a greater amount of non-developed land would be consumed by suburban development as well. This alternative would have the most likelihood for land use conflicts.	This alternative would utilize more land area than the No Project or Transit Emphasis alternatives, but substantially less than the Highway Emphasis foci. This is because fewer projects would be constructed and fewer lanes would be added.
Population and Housing				
None of the alternatives are anticipated to affect regional population and growth level projected for the region. The No Project alternative would have the least potential to result in the unavoidable displacement of residences or businesses because of the limited number of projects involved in this alternative.	This alternative would not increase regional growth through expanded transit opportunities because the enhanced transit system would use existing facilities or construct new facilities aimed at better connecting existing communities in the San Diego region. An enhanced transit system would provide incentive for	The Highway Emphasis (Smart Growth) alternative is not expected to increase growth throughout the region because improvements would predominately provide for better connections between exiting communities in the region. The construction of freeway to freeway connections and the widening of existing freeways and	The potential impacts to population and social environment that would result from this alternative would be very similar to the Highway Emphasis (Smart Growth) alternative. As discussed under the Highway Emphasis (Smart Growth) alternative, no increases in regional population growth would be expected from this	The Revenue Constrained alternative would not result in increased population growth because the limited projects included in this alternative would act to better connect existing communities throughout the San Diego region. This alternative would have the least potential of all build alternatives to result in the

Table 7-4. Continued

No Project	Transit Emphasis	Highway Emphasis (Smart Growth)	Highway Emphasis (Current Plans)	Revenue Constrained
	encouraging alternative commuter travel choices. However, transit improvements in the form of light rail, inter-city rail, and commuter rail that would occur in more urbanized areas would result in an increased potential to cause displacement of businesses and homes.	highways and the construction of new roadways would potentially result in the unavoidable displacement of residences or businesses.	alternative. The construction of new or expanded freeways would potentially result in the unavoidable displacement of residences or businesses.	unavoidable displacement of residences or businesses because of the limited number of projects that would be occur.
Visual Resources				
The No Project alternative includes completion of several key transportation features, including the SR 125 project which, per the SR 125 EIS, was found to have significant, unmitigable visual and community character impacts. However, this alternative also involves the least construction of transportation features such as elevated transit structures that could have visual impacts, so it would have less significant visual impacts than the proposed project and other alternatives.	The transit emphasis of this alternative would mean some visual changes where elevated transit would be built, or where overhead electrical lines would be necessary for fixed rail, but much of the network emphasis would be on buses in existing roads (operational improvements). This would be a less noticeable visual contrast and, other than the No Project alternative, would have the least visual impact.	Under the Highway Emphasis alternative, new freeways would be built and many existing roads would be widened, even wider than proposed under the proposed project. This network would have the greatest potential for visual impacts. The smart growth land use pattern, however, would consolidate ancillary development in the more urban or previously developed core and retain more area as open space. This would be a visual benefit when compared to the Highway Emphasis alternative with current land use plans.	The combined visual changes associated with new and expanded roads and transit facilities, plus the more sprawling land use pattern would result in the most significant visual change of all the alternatives.	This alternative would be similar in change to visual quality as the Transit Emphasis alternative.

Table 7-4. Continued

No Project	Transit Emphasis	Highway Emphasis (Smart Growth)	Highway Emphasis (Current Plans)	Revenue Constrained
Transportation/Circulation				
The No Project Alternative would result in the same average daily travel time regionwide as the proposed project, but the percent of total time in LOS E or F conditions (20%) would be greatest of all alternatives and greater than with the proposed project. The systemwide VMT (109.9 million) would be almost as low as the Transit Emphasis alternative, and transit passenger miles would be the lowest (2.3 million). Under this alternative, congestion would be greatest because more people would be trying to get from place to place on a roadway/ freeway system with minimal improvements and limited transit options.	This alternative would present the greatest opportunity for transit and this is reflected in the extremely high number of transit passenger miles (5.8 million), as well as low systemwide VMT (109.0 million). However, congestion would still be greater than with the Mobility Network project or the Highway Emphasis alternatives (15% of VMT at LOS E or F). Regionwide travel time would be greater than with the No Project or other proposed project alternatives.	This alternative would have the lowest regionwide travel time of all alternatives (14.7 minutes) and would be lower than the proposed project. Daily VMT in congested peak periods (10%) would be lowest of all alternatives and lower than the proposed project.	This alternative would have the longest daily travel time (15.7 minutes) and the greatest number of VMT (123.6 million). Percent travel time in congested peak periods would be 13%, which is greater than the proposed project but less than the No Project alternative. Under this alternative, more people would be driving on the freeways from a further distance with fewer transit options.	The Revenue Constrained alternative would have a relatively low regionwide average daily travel time (14.9 minutes) which is almost as low as the Highway Emphasis (smart growth) alternative. The percent of daily VMT in congestion would be 15% which is equal to the Transit alternative, but less than No Project.
Air Quality				
Air quality emissions for pollutants that form smog (ROG and NO _x) would be lower than today's emissions. The No Project Alternative would result in lower emissions than all build	This alternative would result in the lowest amount of smog forming emissions of all alternatives considered. In addition, this alternative would require less construction than other build	Both Highway Emphasis alternatives would result in the highest amounts of smog forming emissions. However, this alternative is based on smart growth, which would reduce travel times	This alternative would result in the highest amount of smog forming emissions. The current land use plans would result in sprawling development across the region and long vehicle trips	The Revenue Constrained alternative would result in similar air quality as the No Project alternative. The Revenue Constrained alternative would involve less construction than the

Table 7-4. Continued

No Project	Transit Emphasis	Highway Emphasis (Smart Growth)	Highway Emphasis (Current Plans)	Revenue Constrained
alternatives except the Transit Emphasis.	alternatives, which would minimize air quality impacts resulting from construction activities.	and long regional trips. This reduces the amount of emissions produced by this alternative.	would occur. This alternative would create the worst air quality impacts of all the proposed alternatives.	two Highway Emphasis alternatives because fewer projects would be completed.
Noise				
The No Project Alternative would result in significant, temporary construction-related noise impacts for committed projects, but because this alternative has the fewest projects among the alternatives it would have the least construction noise. Many construction noise-related impacts can be mitigated by design measures and appropriate sound barriers.	The alternative, as with the proposed project and other alternatives, would result in temporary construction-related noise impacts. Some improvements under this alternative would be operational or in the middle of a freeway, which would result in incremental changes to an already high noise level. There would be less long-term noise than under the two Highway Emphasis alternatives.	Under this alternative, the future transportation network would have a focus on new and expanded roadways serving many people driving alone in automobiles. This would generate the most construction noise as well as noise during operation.	With this variation of the Highway Emphasis alternative, there would be short-term construction noise and operational noise as well as an increase in noise levels from greater urbanization over a larger area of the region, instead of focused growth. This would be the alternative with the greatest noise impact.	This alternative would have less construction and long-term operational noise than the Highway Emphasis alternatives, but more than the No Project.
Energy				
The No Project alternative would use a lower amount of energy for vehicle and transit operations when compared to the proposed project and all but the transit alternative (see Table 7-3 re: fuel consumption). It would use the least amount of energy for construction.	This alternative would have the lowest fuel consumption because of the high number of trips taken by bus and other mass transit instead of by automobile. The amount of energy for construction would also be less, as some of the improvements would be operational.	This alternative would have a relatively high amount of fuel consumption because of the number of trips taken in automobiles via the extensive highway network.	This alternative would have the highest on-road fuel consumption because of the less dense land use pattern and the focus on automobile travel.	The Revenue Constrained alternative would have more fuel consumption than the transit emphasis alternative, but less than the project or other alternatives.

Table 7-4. Continued

No Project	Transit Emphasis	Highway Emphasis (Smart Growth)	Highway Emphasis (Current Plans)	Revenue Constrained
Geology				
The No Project alternative would result in the least amount of potential geologic impacts because it involves the least amount of construction. Relatively minimal construction of new transportation facilities would limit the potential of damage caused by geologic conditions such as landslides or liquefaction. There would also be the least potential to impact paleontological resources by cutting into previously undisturbed formations.	This alternative would emphasize new transit facilities to expand public transportation throughout the region. Any new facilities would be susceptible to potential geologic impacts. However, many of the transit improvements under this alternative would increase services using existing roads and railways with more buses and would, therefore, not create new geologic hazards. There would still be the potential for cutting into fossil bearing formations so there would be some potential paleontological impact, but less than impacts that would occur in either of the Highway alternatives.	The Highway Emphasis (smart growth) alternative would expand existing roadways and create new segments and connectors. The emphasis on new and expanded roadways would create facilities stretching across the region which would be exposed to potential geologic hazards such as regional faults, areas of weak soils, or intense ground shaking. It would also have more likelihood to impact paleontological resources in previously uncut formations.	Potential geologic impacts under this alternative would be similar to the Highway Emphasis (smart growth) alternative. The focus of creating new and expanded highway facilities across the region would result in the potential for geologic impact. In addition, the land use plan associated with this alternative would increase new development in areas currently undeveloped and in rural use, thus, potentially exposing new development to geologic impacts. For this reason, the Highway Emphasis (Current Plans) alternative has the highest potential for geologic and paleontological impacts.	This alternative would result in the construction of more projects than the No Project alternative, but would result in fewer new or improved features than the Highway alternatives. There is less potential for geologic or paleontological impacts.
Water Resources				
Adverse impacts to water quality are related to the level of project development, both short-term construction and long-term creation of impervious surfaces. Both increase total runoff and pollutant discharge into local	This alternative would result in the construction of new public transportation facilities, such as transit centers, new rail lines, and new pedestrian/bike paths and new roadway/freeway improvements. Many of the	The Highway Emphasis (smart growth) alternative would focus on creating new roadways and expanding existing roads. These projects would require extensive construction and would result in large areas of	Similar to the Highway Emphasis (smart growth) alternative, this alternative would create large area of new impervious surfaces with the same potential for water quality impacts. In addition, the land use pattern of this	This alternative would result in the new construction of transportation facilities, such as new and expanded roads, though at a lesser level than either Highway Emphasis alternatives.

Table 7-4. Continued

No Project	Transit Emphasis	Highway Emphasis (Smart Growth)	Highway Emphasis (Current Plans)	Revenue Constrained
water bodies. The No Project alternative would have the least amount of new construction of all the alternatives and, therefore, the least potential for water quality impacts.	Transit Emphasis projects would increase transit operation on exiting roadways and rail lines. Newly created impervious surfaces would be minor in comparison to the other build alternatives and would create less water quality impacts than either of the Highway Emphasis alternatives.	new impervious surfaces. The new surfaces would also collect pollutants caused by automobiles that would be discharged by into local water bodies. This alternative has a high potential for water quality impacts.	alternative would involve more development in rural areas as compared to smart growth, resulting in more new impervious surfaces. This would result in increased runoff. This alternative would have the highest potential for water quality impacts.	Therefore, potential water quality impacts would result from the projects contained in the Revenue Constrained alternative, but not to the extent of the Highway Emphasis alternatives.
Biological Resources				
Impacts to biological resources typically result from the conversion of land resources to urban use and the associated construction activities. Because the No Project alternative would result in the construction of fewer, and narrower, projects it would have the least potential for biological impacts of all the proposed alternatives.	This alternative would focus on increasing existing transit operations with some new development of rail lines, bike paths, and roadways. Increased transit operation on existing roads would not significantly impact biological resources because no new construction or conversion of habitat would be required. The construction of the new facilities would have the potential to affect biological resources, but at a much lesser level than the major highway projects proposed under other alternatives.	This alternative would result in the expansion of existing roads and the construction of new highways and connectors. These projects would have a high potential to impact biological resources.	The Highway Emphasis (Current Plans) alternative would result in the same potential biological resource impacts as the Highway Emphasis (smart growth) alternative. In addition, the associated land use pattern under this alternative would result in more currently rural areas being converted to urban development, which would result in more potential impacts to biological resources. This alternative would have the highest potential to impact biological resources of all the proposed alternatives.	The Revenue Constrained alternative would result in potential biological resource impacts from roadway expansions and new road construction. These impacts would be similar to the impacts resulting from the Highway Emphasis alternatives, but not to the same extent because of the reduced amount of proposed construction and improvement projects.

Table 7-4. Continued

No Project	Transit Emphasis	Highway Emphasis (Smart Growth)	Highway Emphasis (Current Plans)	Revenue Constrained
Cultural Resources				
Cultural resource impacts typically occur due to ground disturbing activities during construction activities. Because this alternative has the least amount of proposed construction, potential for cultural resource impacts would be lower than the other four alternatives.	The increased operation of public transportation on existing service lines would not significantly impact cultural resources because no new construction would be required. The construction of the new facilities would have the potential to affect cultural resources, but at a much lesser level than the major highway projects proposed under other alternatives.	This alternative would result in the expansion of existing roads and the construction of new highways and connectors. These projects would require a large amount of construction and ground disturbance. This would result in an high potential impact to cultural resources.	The Highway Emphasis (Current Plans) alternative would result in the same potential cultural resource impacts as the Highway Emphasis (smart growth) alternative. The associated land use pattern under this alternative would result in more rural area being converted to urban development which would result in more construction and ground disturbing activities, thus, increasing potential impacts to cultural resources. This alternative would have the greatest potential to impact cultural resources of all the proposed alternatives.	The Revenue Constrained alternative would result in potential cultural resource impacts from roadway expansions and new road construction which necessitates ground disturbance. These impacts would be similar to the impacts resulting from the Highway Emphasis alternatives, but to a lesser extent because of the reduced amount of proposed construction.

**Table 7-5
Comparison of Alternatives to the Proposed Project**

Issue Area	No Project	Transit Emphasis	Highway Emphasis (Smart Growth)	Highway Emphasis (Current Plans)	Revenue Constrained
<u>Land Use</u>					
- Loss of Constrained Land	1	1	5	5	3
- Consistent with smart growth planning efforts	5	3	3	5	3
Population & Housing	4	3	3	4	3
Visual	2	2	4	5	2
<u>Traffic</u>					
- Congestion	5	4	2	3	4
- Travel Time	3	4	2	4	2
Air Quality	3	2	4	5	3
Noise	2	2	4	5	2
Energy	3	2	4	5	3
Geology	2	2	4	5	2
Water Resources	2	2	4	5	3
Biological Impacts	1	2	4	5	3
Cultural Resources	1	2	4	5	3

1 - Much more favorable, 2 - More favorable, 3 - Comparable, 4 - Less favorable, 5 - Much less favorable

As noted, the most important goal of the seven identified for the 2030 RTP is to improve mobility by better moving people and goods, and by reducing congestion. As compared to the proposed project, the Transit Emphasis Alternative would likely have incrementally fewer impacts to land based resources, such as biology and geology, because more of the focus would be placed on improving transit systems on existing roads instead of building or expanding roads to accommodate cars, carpools, buses, and trucks. New facilities to accommodate dedicated transit would still be constructed with this alternative. Also, SR 11 and the new U.S.-Mexico port-of-entry would not be constructed.

The proposed project, however, is designed to handle increased numbers of automobiles, trucks, carpool, buses, trains, as well as transit. It would get people to and from their destinations more quickly, as well as allow them to spend less travel time in congested (LOS E or F) conditions. This is evidenced by such indicators as average travel time for work trips and congestion in Table 7-3. The proposed project would have an estimated 25.4 minutes in daily travel time to work and the Transit Emphasis Alternative would be 31.7 minutes. The proposed project would have an estimated 12 percent of vehicle miles at LOS E and F whereas the Transit Emphasis Alternative would have 15 percent. The proposed project would also implement a fourth U.S.-Mexico port of entry at SR 11. The proposed project would be best able to reduce traffic and congestion impacts while facilitating the international movement of goods, and minimizing impacts to other land based resources.

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CHAPTER 8.0

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CHAPTER 9.0

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9.2 PERSONS CONTACTED

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John Conley, Principal Planner, City of Vista. September 2002.

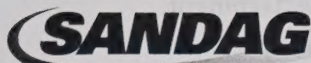
John Grisafi, Senior Transportation Surveyor, Caltrans, District 11. September 19, 2002.

Wayne Schrader, Vegetable and Strawberry Farm Advisor at County of San Diego Department of Agriculture. August 20, 2002.

Bill Davidson, DMV Statistics Unit, September 23, 2002.

APPENDIX A

NOTICE OF PREPARATION AND RESPONSE LETTERS



San Diego's Regional Planning Agency

401 B Street, Suite 800
San Diego, CA 92101-4231
(619) 595-5300
Fax (619) 595-5305
www.sandag.org

July 12, 2002

TO: Interested Agencies and Individuals

FROM: SANDAG Staff

SUBJECT: Notice of Preparation of an Environmental Impact Report for
the 2030 Regional Transportation Plan (RTP)

MEMBER AGENCIES

Cities of
Carlsbad
Chula Vista
Coronado
Del Mar
El Cajon
Encinitas
Escondido
Imperial Beach
La Mesa
Lemon Grove
National City
Oceanside
Poway
San Diego
San Marcos
Santee
Solana Beach
Vista
and
County of San Diego

ADVISORY MEMBERS

California Department
of Transportation

Metropolitan Transit
Development Board

North San Diego County
Transit Development Board

United States
Department of Defense

San Diego
Unified Port District

San Diego County
Water Authority

Tijuana/Baja California/Mexico

SANDAG, as lead agency, will prepare an Environmental Impact Report (EIR) for the above referenced project. SANDAG needs to know your views, or the views of your agency, as to the scope and content of the environmental information that will be addressed in the EIR. The project description is contained in the attached material.

A public scoping meeting will be held during the 2030 RTP Working Group meeting scheduled for July 23, 2002 at 10:00 am at SANDAG. Public input will be taken at this meeting. In addition, public input can be provided in writing at the meeting or can be sent via email to rru@sandag.org.

Due to the time limits mandated by state law, your response must be sent at the earliest possible date, but no later than 30 days after the date of this notice (August 12, 2002).

Please send your response to Rob Rundle, Senior Regional Planner, at the address shown above or to rru@sandag.org. Please include the name of a contact person in your agency, if appropriate.

RR/jdk

Attachment: Project Description

**Environmental Impact Report
2030 Regional Transportation Plan
Project Description
July 12, 2002**

Background and Overview

The San Diego Association of Governments (SANDAG) is currently preparing a Regional Transportation Plan (RTP) for the San Diego Region and an Environmental Impact Report (EIR) pursuant to the California Environmental Quality Act (CEQA). The RTP addresses all forms, or modes, of transportation including automobiles, transit, bicycles, pedestrians, intercity railroads, and aviation facilities. The RTP contains public policies, strategies, and projects and programs aimed at meeting the diverse mobility needs of the growing San Diego region through the year 2030.

In accordance with state and federal guidelines, the RTP is updated approximately every three years. The last comprehensive EIR on the RTP was conducted in 2000 for the 2020 RTP. A new EIR for the 2030 RTP is necessary to adequately evaluate potentially significant environmental effects of the plan and to indicate the manner in which such significant effects can be avoided or mitigated. This Notice of Preparation (NOP) is intended to alert regulatory and trustee agencies, interested agencies, and individuals of the preparation of the 2030 RTP EIR. Comments regarding the scope of the EIR received during the 30-day NOP review period will be incorporated, as appropriate, in the environmental document.

The 2030 RTP will focus on regional mobility as opposed to addressing each mode of transportation individually. It will address four major components of improving mobility:

1. land use changes;
2. systems development;
3. systems management; and
4. demand management

Strategies, projects, and programs in each of these areas will be identified. The 2030 RTP also will identify a "regionally significant transportation network" consisting of major highways, regional transit services, and selected regional arterials. This regionally significant transportation network will serve as the core of the mobility transportation network included in the 2030 RTP and will be the highest priority for regional transportation funding. The 2030 RTP also will include financial/funding strategies and actions needed to implement the plan as well as regular monitoring of the plan's improvements. The baseline land use assumption used for the RTP will be a "smart growth" land use pattern. The smart growth land use scenario refers to a development pattern that focuses growth into the urban/suburban areas of the region and minimizes interregional commuting and sprawl to the east.

Issues Addressed in the EIR

The EIR will analyze the project's impacts on the physical environment. The EIR will address how the project impacts the following issue areas:

1. Land Use
2. Visual Resources
3. Transportation

4. Air Quality
5. Noise
6. Energy
7. Geology
8. Hydrology/Water Resources
9. Biological Resources
10. Cultural Resources

In addition, the EIR will address socioeconomic/environmental justice issues to determine if there would be disproportionately high and adverse effects on minority and low-income populations.

Alternatives Analyzed in the EIR

SANDAG will evaluate several alternatives in the EIR. Each alternative will be compared for its potential to achieve the goals of the 2030 RTP while reducing potentially adverse regional environmental impacts. In addition to the project, which will assume a smart growth land use scenario with the mobility transportation network, the EIR will evaluate 4 alternatives as described below.

1. No Project Alternative – The No Project Alternative is required by CEQA. For this EIR, the No Project Alternative is defined as a smart growth land use scenario (identical to the Project), but the transportation network would only include those projects that have already received funding, are scheduled for funding, and/or have received environmental clearance.
2. Highway Extreme Alternative – The Highway Extreme Alternative will assume a land use scenario of existing (current) plans as they are adopted in each of the 19 jurisdictions today. That is, no county population targets and footprints will be assumed in this alternative nor will the City of San Diego's "City of Villages" growth strategy. This alternative will assume the highway extreme transportation network which places a heavy emphasis on improving and constructing roads and highways and less emphasis on transit, which would be the likely network necessary to support such a land use pattern.
3. Transit Extreme Alternative – The Transit Extreme Alternative will assume the smart growth land use scenario (as in the Project and the No Project Alternative described above). In addition, this alternative will assume a transit extreme network where transit facilities would be improved and constructed with less emphasis on highways.
4. Environmental Impact Minimization Alternative – This alternative is currently undefined. The alternative will be developed as the analysis for the "Project" identifies significant environmental impacts. The purpose of this alternative would be to minimize or eliminate those impacts associated with the "Project," if any.

Although these alternatives have been identified, SANDAG is seeking input on the alternatives in the NOP process which could result in modifications to the number of alternatives analyzed in the EIR, or modifications to the alternatives identified above.

July 24, 2002

TO: Interested Parties

FROM: SANDAG Staff

SUBJECT: 2030 Regional Transportation Plan (RTP) Environmental Impact Report (EIR) – Public Scoping Meeting

The following issues were raised at the July 23, 2002 Public Scoping meeting for the 2030 RTP EIR. The comments were provided by agency representatives and members of the public as input into what should be included in the 2030 RTP EIR.

Mike Stepner (C3 – CAC) –

- I have concerns about how to plan a transportation network for a land use vision that is not defined yet.
- How are the impacts of the projects identified in the RTP evaluated? How do you determine the impacts on the adjacent land uses?
- In the alternatives section, how does SANDAG intend to evaluate the benefits of the transit alternative in terms of parking that does not have to be built if more people are using transit? How are these benefits assessed?
- What are the land use effects of the different transportation network alternatives?
- The Smart Growth land uses need to be described in the EIR so the public knows how the land use pattern will look.

Dave Hopkins (SCAT) –

- The EIR needs to describe the difference between infill (Smart Growth) development versus sprawl development and the implications of either pattern of development.
- Existing land use patterns are not Smart Growth and will not get to “Smart Growth” until 2030 or beyond. How do you create a transit system that supports Smart Growth if you do not have the land uses to support it?

Michael Beck (EHL – CAC) –

- The transportation system needs to service the land use plan, not the other way around.
- Which EIR alternatives will and which will not include the general plan updates by the County, City of San Diego, and City of Chula Vista?
- How does SANDAG reconcile the status of the plans that are being updated now with the preparation of the RTP?
- Will the EIR describe how projects are prioritized for funding? Is project funding entirely based upon the approved transportation evaluation criteria?
- Does SANDAG have a definition of Smart Growth and will that be applied region wide or will each jurisdiction interpret Smart Growth differently?
- What is meant by “modes” as stated in the Background section of the NOP?
- Will the EIR provide a matrix that allows the readers to compare performance measures/standards for each alternative?

Carolyn Chase (CAC) –

- SANDAG should evaluate an extreme land use scenario that would support the type of transit system that we are asking the tax-payers to pay for. Is that anticipated in this EIR?
- Will growth inducement and cumulative impacts be analyzed in the EIR?

Harvey Goodfriend (SDCTA – CAC) –

- Has SANDAG considered concentrating the transit expenditures to the most densely developed areas of the region instead of trying to spread the transit system out over such a large geographic area?

Gail Brydges (City of Coronado) –

- Is the “Project” as will be defined in the EIR the same as the Mobility Alternative that has been presented to the 2030 RTP Working Group in the past?

Walt Brewer (General Public) –

- How is the EIR being presented to the public so that citizens that have not been involved in the process can understand the issues being addressed?

Karen Scarborough (General Public) –

- Will SANDAG's public relations consultant provide assistance with outreach for the EIR?

Dutch Van Dierendonck (Ramona Planning Group – General Public) –

- When will the draft EIR be released for public review?

Fred Luedtke (City of Escondido – CTAC) –

- How will the project alternatives be compared when there are different land use scenarios used for the alternatives?
- Why did SANDAG limit the alternatives analysis to those identified in the NOP? There are many more possible alternatives that could be analyzed.
- Are the regional arterial projects the same in all the project alternatives being evaluated?

Lynne Baker (EHL) –

- Why is there no mention of a carpool emphasis alternative in the NOP?
- Why use the “extreme scenarios” in the EIR alternatives analysis and not just an alternative that could reasonably be implemented?
- The EIR should analyze how Prop. 42 funds will be used to fund transportation projects and if other funds will be freed up to use for other types of projects.
- How does SANDAG plan to fund the Green Car system that will get people to the transit services offered throughout the region?
- The EIR should include a land use alternative that assumes a Smart Growth extreme scenario.
- Can the EIR identify why it is preferable, or more economical, to build out along the transit corridors in a more-dense pattern of development?

John Lippitt (City of Chula Vista - CTAC) –

- If there is development intensification along the transit lines, specifically along the trolley in the South Bay, frequencies will have to be increased. Will the EIR address the impacts to traffic flow that will result from the increased frequencies since there is no grade separation along that line?

Hal Goldberg (General Public) –

- Is there a mobility extreme that will be analyzed in the EIR?

NATIVE AMERICAN HERITAGE COMMISSION

915 CAPITOL MALL, ROOM 364
SACRAMENTO, CA 95814
(916) 653-4082
(916) 657-5390 - Fax



July 19, 2002

Rob Rundle
San Diego Association of Governments
401 "B" Street, Suite 800
San Diego, CA 92101

RE: SCH# 2002071059 - 2030 Regional Transportation Plan, San Diego County

Dear Mr. Rundle:

The Native American Heritage Commission has reviewed the Notice of Preparation (NOP) regarding the above project. To adequately assess and mitigate project-related impacts on archaeological resources, the Commission recommends the following actions be required:

- ✓ Contact the appropriate Information Center for a record search. The record search will determine:
 - If a part or all of the area of project effect (APE) has been previously surveyed for cultural resources.
 - If any known cultural resources have already been recorded on or adjacent to the APE.
 - If the probability is low, moderate, or high that cultural resources are located in the APE.
 - If a survey is required to determine whether previously unrecorded cultural resources are present.
- ✓ If an archaeological inventory survey is required, the final stage is the preparation of a professional report detailing the findings and recommendations of the records search and field survey.
 - The final report containing site forms, site significance, and mitigation measures should be submitted immediately to the planning department. All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum, and not be made available for public disclosure.
 - The final written report should be submitted within 3 months after work has been completed to the appropriate regional archaeological Information Center.
- ✓ Contact the Native American Heritage Commission for:
 - A Sacred Lands File Check.
 - A list of appropriate Native American Contacts for consultation concerning the project site and to assist in the mitigation measures.
- ✓ Lack of surface evidence of archeological resources does not preclude their subsurface existence.
 - Lead agencies should include in their mitigation plan provisions for the identification and evaluation of accidentally discovered archeological resources, per California Environmental Quality Act (CEQA) §15064.5 (f). In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American, with knowledge in cultural resources, should monitor all ground-disturbing activities.
 - Lead agencies should include in their mitigation plan provisions for the disposition of recovered artifacts, in consultation with culturally affiliated Native Americans.
 - Lead agencies should include provisions for discovery of Native American human remains in their mitigation plan. Health and Safety Code §7050.5, CEQA §15064.5 (e), and Public Resources Code §5097.98 mandates the process to be followed in the event of an accidental discovery of any human remains in a location other than a dedicated cemetery.

Sincerely,

Rob Wood
Environmental Specialist III
(916) 653-4040

CC: State Clearinghouse

From: [REDACTED]
Date: Sun, 21 Jul 2002 21:12:26 EDT
Subject: EIR for 2030 RTP
To: rru@sandag.org
X-Mailer: AOL 5.0 for Mac sub 28

July 23, 2002
SANDAG 2030 RTP EIR scoping meeting

To: Rob Rundle SANDAG Senior Regional Planner

Would like to thank you for your July 12 letter, but it appears to me that the Highway Extreme Alternative has been selected since I-5 is being widened between Oceanside and the I-5, I-805 merge and this merge is also going through a major expansion which has been termed a freeway within a freeway. By providing for the mainly single occupant vehicle to this point in time it seems rather doubtful that the transit extreme could be implemented without a major shift in public funding. Have previously spoken before SANDAG and the Metropolitan Transit

Development Board (MTDB) about a 1% sales tax to support public transportation and its expansion which MTDB has termed its Transit First scenario. Unfortunately SANDAG has been warned by a political consultant that it will be lucky to have the voters approve the continuation of the 1/2 % Transnet tax. Your letter was thorough, but does it deal with reality? Think it does not, so this exercise is mainly to cover SANDAG board members behinds. Furthermore until the San Diego county public loosens its purse strings like the people of Los Angeles did with a 1% sales tax without time limits there will be no convenient public transportation system here. In other words you get what you pay for.

Charles Lungerhausen
(an interested citizen)

[REDACTED]
[REDACTED]
[REDACTED]

Rob will be attending the group meeting on Tuesday and bringing a copy of this with me. Also may make further comments at that time.

Date: Tue, 16 Jul 2002 13:10:19 -0700

From: W & J Brewer [REDACTED]

Subject: RTP 2030 EIR Inputs

To: Rob Rundle <rru@sandag.org>, Kim Kawada <kka@sandag.org>

Cc: Eric Pahlke <epa@sandag.org>, Carolyn Chase <cdchase@sdearthtimes.com>, Harveygoodfriend@aol.com

X-Mailer: Microsoft Outlook Express 6.00.2600.0000

Reference: NOP for EIR for RTP 2030. July 12.

In order to be responsive on the very tight time scale for the RTP 2030 EIR Preparations, I'd appreciate some clarifications, and follow up upon previous questions.

Are "regionally significant transportation network" and "the project", the same, and the same as the "Mobility Alternative" previously analyzed and reported?

Will the "project" and the Alternatives be analyzed and available on a fiscally constrained basis? (Significantly less than the \$26 Billion which has been used)

Will a Highway Extreme Alternative, with transit support allocations at or close to zero be analyzed?

What is "such" referring to under; 2. Highway Extreme Alternative. Transit-----likely network for what? ---- existing, or smart growth land scenarios?

Where are quantitative criteria to be used in the EIR for the "Issues Addressed", and presumably for 4. Environmental Impact Minimization Alternative? Is 3. Transportation, under Issues, different than mobility used elsewhere?

What is the process, and what steps have been taken to achieve a high level of notice to the whole public about the EIR, and the July 23 Meeting?

There are several pending questions I have submitted in the last month or so. Answers are important to meeting your deadline. The specifics are in e-mail messages. Below is only a topic title list.

New transit routes---- Culp

New highway routes-----Chavez

Congestion comparison with RTP 2020 -----Aries

People/vehicle flow assumptions on sample freeway configurations used, with
without HOV, TO, vs conventional lanes----- McFarlane

Auto and transit trip length used for alternatives-----McFarlane

SR 125A characteristics, costs, etc----Chavez/Thomas partial data so far

Arterials contributions in passenger-miles etc for project and
Alternatives----Chavez

Federal & State funding procedures, and plans---Scott; current status
described.

With regard to the last funding item, I suggest the Working Group, and the
public would benefit from a summary of the long term funding process, and
its interaction with the evolving RTP, local, Sacramento, Washington
transportation agencies, Congressional/Legislative delegations etc.

Thank you,

Walt Brewer

[REDACTED]

X-Server-Uid: b6243656-243a-11d3-b810-0008c79f1cfe

From: "Simon.Marie" [REDACTED]

To: "rru@sandag.org" <rru@sandag.org>

Subject: NOP of an Environmental Impact Report for the 2030 Regional
Transportation Plan (RTP)

Date: Tue, 16 Jul 2002 14:56:09 -0700

X-Mailer: Internet Mail Service (5.5.2653.19)

X-WSS-ID: 112A4BF7365214-01-02

I was planning to attend the 2030 RTP Working Group meeting, but something comes up and I won't be able to make it. I would very much appreciate getting the material that Auto Club staff can review it and send comments before the August 12 deadline. I am in your mailing list, but again here is my address: Marie Marthe Simon--Automobile Club of Southern California

3333 Fairview Road, Costa Mesa, CA 92626 --Mail Stop A 131. Thank you.

Rob Rundle,

As requested, suggestions & comments for the current RTP 2030 EIR

These are based upon my observations of EIR actual use, compared to its generic environmental impact origins.

- 1) The normal, "turn the crank" evaluations are required I suppose, but are of little value to the principle interests of improving regional mobility.

None of the Working Group Networks evaluated planned to be used for the EIR meet this test.

Energy and land use are so dominated by the principal source of mobility, automobiles, and passenger-miles/per energy unit so similar, tiny assumption changes in mpg, for example, swamp any differences due to mode distributions.

- 2) The EIR takes the place of an options trade-off analysis, which should normally be found in the RTP for transportation. It is the basis for discussion/approval/disapproval, usually by single interest activists.

For all concerned, the pro-con arguments need to be spelled out quantitatively and objectively. The associated data is simultaneously the basis for the several facets of environmental comparisons.

- 3) RTP 2030 is very special because it frames the basis for the important TransNet Extension ballot in 2004. Public polling is a significant part of formulating the ordinance for the ballot, and for convincing voters. For at least the reasons given in (2) above, an EIR section should be devoted, again to include all options, to regional impacts in terms the average citizen can use to understand both his/her interests, as well as the broader context. Again while environment is the frame for the EIR, the options comparisons are equally important.

- 4) I suppose the assumptions for mode performance, and environmental impacts are quite well circumscribed by regulation for the 30-year period we have. I understand absolute levels for regional air quality for example must be met, despite population and activity increases. It is hard to visualize the directions the prime source, vehicle propulsion, will take as technology evolves rapidly. Do the rules for EIR's allow "what if" excursions for the most likely candidates to supply another parameter to help us make a Network choice?

Hope this is helpful,

Walt Brewer




County of San Diego

JOHN L. SNYDER
DIRECTOR

DEPARTMENT OF PUBLIC WORKS

3535 OVERLAND AVE, SAN DIEGO, CALIFORNIA 92123-1286

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FAX: (658) 288-0461

COUNTY ENGINEER
COUNTY ROAD COMMISSIONER
COUNTY SURVEYOR
COUNTY AIRPORTS
FLOOD CONTROL
WASTEWATER MANAGEMENT

August 9, 2002

Rob Rundle
SANDAG
401 B Street, Suite 800
San Diego, California 92101

NOTICE OF PREPARATION FOR 2030 REGIONAL TRANSPORTATION PLAN EIR

Dear Mr. Rundle:

County staff has reviewed the Notice of Preparation (NOP) issued by the San Diego Association of Governments (SANDAG) dated July 12, 2002, regarding the preparation of an Environmental Impact Report (EIR) for the 2030 Regional Transportation Plan (RTP). The following are our comments:

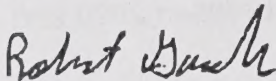
- The County of San Diego is in the process of updating its General Plan. The EIR should explain the land use assumptions that were used for the County area in all 2030 RTP alternatives. The EIR should also differentiate between 2020 and 2030 growth projections.
- The EIR should provide a definition for "Smart Growth" that is applicable and appropriate for the rural and/or undeveloped areas of the region.
- The EIR should identify what land use and transportation network assumptions were used for the sphere of influence areas. The EIR should state whether the 2030 assumptions will be based on the County's and the City's plans for the sphere of influence areas. SANDAG should consider using a range of densities for the sphere of influence area in which the City's land use plan is denser than the County's land use plan.
- The 2030 highway network within the unincorporated area should be based on buildout of the County's adopted Circulation Element Plan. SANDAG should coordinate with the County's Department of Public Works (DPW) on issues related to the Circulation Element Plan.

Mr. Rundle
Page 2
August 9, 2002

- The EIR should provide a detailed list of the projects and programs that would need to be implemented under the proposed RTP alternative and the Highway and Transit Extreme alternatives. The proposed projects and programs should be listed by the individual jurisdictions.
- The EIR should highlight the proposed 2030 RTP policies, programs, and projects that are not consistent with the County's adopted General Plan and/or current County policies.
- The EIR should identify the estimated number of housing units that could be accommodated by the year 2030 under the County's adopted General Plan, the County Targets/Proposed land use plan and Sandag's assumptions from 2020 to 2030.
- The EIR should identify the land use and trip generation assumptions for the local Indian reservations, especially the reservations with gaming facilities.
- The EIR should explain the assumptions used for the areas outside the San Diego region such as Orange and Riverside counties and Mexico.
- The County will comment on the Congestion Management Plan (CMP) section of the 2030 RTP separately.

If you have any questions concerning our comments, please call me at (858) 694-3728.

Very truly yours,



ROBERT GORALKA
Project Manager

RG:naj

Cc: Ivan Holler, DPLU (0650); Curt Gonzales, DPLU (0650)

Erik Bruvold, 11:41 AM 07/26/2002 -0700, RE: 2030 RTP EIR Scoping Meeting comments

From: Erik Bruvold [REDACTED]
To: "Rob Rundle" <rru@sandag.org>
Subject: RE: 2030 RTP EIR Scoping Meeting comments
Date: Fri, 26 Jul 2002 11:41:03 -0700
X-Mailer: Internet Mail Service (5.5.2653.19)

Understandable given the criticisms of RTP2020. I was struck by the number of people (some which criticized you the LAST time for focusing on land use) who now want it back in.....what did Churchill say about "needless consistency being the hobgoblin of little minds" ;-)

I do think you need to push readers and opinion leaders to show what they could get with some super smart growth (and how whatever transportation network they chose won't necessarily allow them to continue to fight density with no adverse side effects).

-----Original Message-----

From: Rob Rundle [mailto:rru@sandag.org]
Sent: Friday, July 26, 2002 11:38 AM
To: Erik Bruvold
Subject: RE: 2030 RTP EIR Scoping Meeting comments

Thanks for the comment. The undefined alternative will evolve out of what impacts result from the project. I will give some thought to your suggestion. We don't want to convey that the "project" is a land use plan, rather a transportation network that supports a land use pattern. Though I see your point, and land use strategies are the way to create a transportation network that functions.

Thanks again for the comment. Rob

At 11:25 AM 07/26/2002 -0700, you wrote:

>Rob,
>
>Sorry that I missed the meeting last week - I was on vacation.
>
>The NOP looks fine
>
>My only comment would be that for the Environmental Impact Minimization
>Alternative to be split into 2 "strategies" (that might mean 2 alternatives
>but I am hoping it won't). One strategy would focus on "land use"
>mitigation strategies. The other could focus on Transportation Network
>mitigations. The first thus would be a roundabout way at showing what
>"super smart growth" could accomplish if actually implemented (and
hopefully
>spur on the discussion about the value and benefits of that kind of land
use
>strategy).

Erik Bruvold, 11:41 AM 07/26/2002 -0700, RE: 2030 RTP EIR Scoping Meeting comments

>
>
>
>-----Original Message-----
>From: Rob Rundle [mailto:rru@sandag.org]
>Sent: Friday, July 26, 2002 11:13 AM
>To: gbarber@ci.encinitas.ca.us; rhurst@ci.la-mesa.ca.us;
>jlippitt@ci.chula-vista.ca.us; ewimmer@ci.lemon-grove.ca.us;
>gfranco@ci.san-marcos.ca.us; dyork@ci.vista.ca.us;
>cselniha@co.san-diego.ca.us; carlselnickairsandiego@yahoo.com;
>rreideha@co.san-diego.ca.us; ckluth@mtdb.sdmnts.com;
>jimbaross@worldnet.att.net; dhopkins@cts.com; awhite@amassets.com;
>ehlbeck@flash.net; stepner1@pacbell.net; eb@sandiegobusiness.org;
>gmattson@mms-inc.net; cdchase@sdearthtimes.com; patpartin@nctimes.net;
>harvey.goodfriend@sdsu.edu; bbarnum@agcsd.org; cnathanson@ucsd.edu;
>ahamilha@co.san-diego.ca.us; Tbates@mtdb.sdmnts.com;
>dschumacher@mtdb.sdmnts.com; Gene_Pound@dot.ca.gov; kka@sandag.org;
>donovansm@efds.w.navy.mil; smarks@nctd.org; hwe@sandag.org;
>kbryne@mnac.com; sdstlinc@gateway.net; fluedtke@ci.escondido.ca.us
>Cc: Heather Werdick; fennert@edaw.com; wilkinsont@edaw.com
>Subject: 2030 RTP EIR Scoping Meeting comments

>
>
>Attached are the comments that were raised at the July 23, 2002 2030 RTP
>Working Group meeting regarding the EIR for the 2030 RTP. For those of you
>who provided comments, please review the attachment to ensure that your
>comments are reflected accurately. If you have any changes or would like
>to provide any additional comments, please provide them to me prior to
>August 12, 2002.

>
>Thank you for your input.

>
>Rob

>
>*****

>Rob Rundle, Senior Regional Planner
>San Diego Association of Governments (SANDAG)
>401 B Street, Suite 800
>San Diego, CA 92101
>ph: (619) 595-5649, fx: (619) 595-5305
>Visit SANDAG's website at www.sandag.org
>e-mail: rru@sandag.org

Rob Rundle, Senior Regional Planner
San Diego Association of Governments (SANDAG)
401 B Street, Suite 800
San Diego, CA 92101
ph: (619) 595-5649, fx: (619) 595-5305

Fred Luedtke, 10:12 AM 07/30/2002 -0700, Re: 2030 RTP EIR Scoping Meeting comments

Date: Tue, 30 Jul 2002 10:12:02 -0700

From: "Fred Luedtke" <Fluedtke@ci.escondido.ca.us>

To: <rru@sandag.org>

Subject: Re: 2030 RTP EIR Scoping Meeting comments

X-MIME-Autoconverted: from quoted-printable to 8bit by capricorn.sandag.cog.ca.us id
g6UHBoWs004682

Rob

Looks like very thorough set of notes.

The second bullet under my name is a little off the mark from my question. I understand limiting the alternatives to a reasonable and manageable number. The question really was why not test all of the alternative transportation networks against both of the land use scenarios- current plans and smart growth. Seems like an apples and oranges comparison when some networks are analyzed based on current land use plans and some are analyzed based on a smart growth land use plan.

Fred

>>> Rob Rundle <rru@sandag.org> 07/26/02 11:12AM >>>

Attached are the comments that were raised at the July 23, 2002 2030 RTP Working Group meeting regarding the EIR for the 2030 RTP. For those of you who provided comments, please review the attachment to ensure that your comments are reflected accurately. If you have any changes or would like to provide any additional comments, please provide them to me prior to August 12, 2002.

Thank you for your input.

Rob

Rob Rundle, Senior Regional Planner
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Visit SANDAG's website at www.sandag.org
e-mail: rru@sandag.org

Harvey Goodfriend, 05:04 PM 07/28/2002 -0700, Re: 2030 RTP EIR Scoping Meeting comments

User-Agent: Microsoft-Outlook-Express-Macintosh-Edition/5.02.2022

Date: Sun, 28 Jul 2002 17:04:29 -0700

Subject: Re: 2030 RTP EIR Scoping Meeting comments

From: Harvey Goodfriend [REDACTED]

To: Rob Rundle <rru@sandag.org>

X-MailScanner: Found to be clean

Rob, I have an additional comment which I think is germane . . .
Where in the process is there an assessment of the impact of the various options upon air quality? It would seem to me that a greatly expanded transit component means more energy consumption and emissions while at the same time given the new law in California auto emissions over the next 30 years may diminish in spite of more cars and more miles traveled. Whether transit is powered by fossil fuel or electricity it still ultimately produces emissions and given the substantial expansion of both the system and frequency of service that may causes much greater environmental impact. At least this matter must be tested as part of the EIR.
Harvey Goodfriend

> From: Rob Rundle <rru@sandag.org>
> Date: Fri, 26 Jul 2002 11:12:52 -0700
> To: gbarber@ci.encinitas.ca.us, rhurst@ci.la-mesa.ca.us,
> jlippitt@ci.chula-vista.ca.us, ewimmer@ci.lemon-grove.ca.us,
> gfranco@ci.san-marcos.ca.us, dyork@ci.vista.ca.us,
> cselniha@co.san-diego.ca.us, carlselnickairsandiego@yahoo.com,
> rreideha@co.san-diego.ca.us, ckluth@mtdb.sdmts.com,
> jimbaross@worldnet.att.net, dhopkins@cts.com, awhite@amassets.com,
> ehilbeck@flash.net, stepner1@pacbell.net, eb@sandiegobusiness.org,
> gmattson@mms-inc.net, cdchase@sdearthtimes.com, patpartin@nctimes.net,
> harvey.goodfriend@sdsu.edu, bbarnum@agcsd.org, cnathanson@ucsd.edu,
> ahamilha@co.san-diego.ca.us, Tbates@mtdb.sdmts.com,
> dschumacher@mtdb.sdmts.com, Gene_Pound@dot.ca.gov, kka@sandag.org,
> donovansm@efds.w.navy.mil, smarks@nctd.org, hwe@sandag.org,
> kbyrne@mnac.com, sdstlinc@gateway.net, fluedtke@ci.escondido.ca.us
> Cc: Heather Werdick <hwe@sandag.org>, fennert@edaw.com, wilkinsont@edaw.com
> Subject: 2030 RTP EIR Scoping Meeting comments
>
> Attached are the comments that were raised at the July 23, 2002 2030 RTP
> Working Group meeting regarding the EIR for the 2030 RTP. For those of you
> who provided comments, please review the attachment to ensure that your
> comments are reflected accurately. If you have any changes or would like
> to provide any additional comments, please provide them to me prior to
> August 12, 2002.
>
> Thank you for your input.
>
> Rob
>
> *****

SAN DIEGO REGIONAL ECONOMIC DEVELOPMENT CORPORATION



JULIE MILLER WRIGHT
President & CEO

"THE ESSENCE OF LEADERSHIP IS VISION"

"YOU CAN'T TALK ABOUT YOUR TRANSPORTATION NETWORK
UNTIL YOU'VE DECIDED WHAT KIND OF CITY YOU WANT...

WHAT WOULD THE IDEAL ENVIRONMENT BE, HOW TALL
SHOULD THE BUILDINGS BE. WE HAVE STRUCTURED OUR
CITIES AROUND ROADS, BUT WHY ARE PUBLIC SPACES
FOR CARS MORE IMPORTANT THAN PUBLIC SPACES FOR
CHILDREN? EVERYTIME WE MAKE A SPACE FOR A
CAR, IT CREATES LESS SPACE FOR CHILDREN...

WE NEED TO TALK OF HAPPINESS, THAT'S THE GOAL"

ENRIQUE PENALOSA, FORMER MAYOR OF BOGOTA COL.

401 B STREET

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August 7, 2002

Mr. Rob Rundle
Senior Regional Planner
SANDAG
401 B Street
Suite 800
San Diego, CA 92101-4231

RE: **Comments on the Notice of Preparation for a Draft Environmental Impact Report for the SANDAG 2030 Regional Transportation Plan – SCAG No. 1 20020368**

Dear Mr. Rundle:

Thank you for submitting the **Notice of Preparation for a Draft Environmental Impact Report for the SANDAG 2030 Regional Transportation Plan** to SCAG for review and comment. As areawide clearinghouse for regionally significant projects, SCAG reviews the consistency of local plans, projects, and programs with regional plans. This activity is based on SCAG's responsibilities as a regional planning organization pursuant to state and federal laws and regulations. Guidance provided by these reviews is intended to assist local agencies and project sponsors to take actions that contribute to the attainment of regional goals and policies.

We have reviewed the **Notice of Preparation** and have no comments at this time. However, SCAG would like to receive a copy of the Draft EIR for the SANDAG 2030 Regional Transportation Plan to review and provide comments when the document is completed and available for public review.

Please provide a minimum of 45 days for SCAG to review the Draft EIR when this document is available. If you should have any questions, please contact Jeffrey Smith, Senior Regional Planner, at (213) 236-1867. Thank you.

Sincerely,

SYLVIA PATSAOURAS

Manager

Performance Assessment & Implementation

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Riverside County Transportation Commission: Robin Lowe, Hemet

Ventura County Transportation Commission:

Patrick Thomas
Director of Public Works
Engineering Division
(760) 839-4651, FAX (760) 839-4587



**CITY OF
ESCONDIDO**

201 NORTH BROADWAY
ESCONDIDO, CA 92025

August 7, 2002

Rob Rundle
San Diego Association of Governments
401 B Street, Suite 800
San Diego, California

Subject: 2030 Regional Transportation Plan, Notice of Preparation of
Environmental Impact Report

Dear Rob,

Thank you for the opportunity to comment upon the scope and content of the Environmental Impact Report being prepared for the 2030 Regional Transportation Plan (RTP). This is a very important undertaking and we are pleased to be able to participate in the planning of the region's transportation network.

We are pleased to see that significant investments, in both highway and transit projects, are proposed along the Interstate 15 and State Route 78 corridors. Improved mobility along these two corridors is essential to the quality of life and economic prosperity of the San Diego region, especially the North County area. We are concerned with the timing of these proposed improvements, particularly with the planned HOV/ML project on I-15. We understand that the I-15 HOV/ML project is to be constructed in three phases with the middle portion planned in the near future. Since the region already has reversible lanes in operation the southern portion of the project, we believe serious consideration should be given to constructing the northern portion as the next phase.

We would also like to see the role of the Regional Arterial System (RAS) studied and analyzed with the same level of detail as the transit and highway systems. We believe the transit and highway systems will operate effectively only if combined with a well-planned and well-

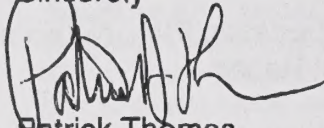
Lori Holt Pfeiler, Mayor
June Rady, Mayor Pro Tem
Tom D'Agosta
Ed Gallo
Marie Waldron

August 7, 2002
2030 RTP NOP
Page 2

developed RAS network. Continued progress on the construction of the RAS network is essential to the mobility of the region.

Again, thank you for the opportunity to contribute to this regional transportation plan. Please advise us of future opportunities to review and comment upon the 2030 RTP as it is further developed.

Sincerely

A handwritten signature in black ink, appearing to read 'Patrick Thomas', written over a horizontal line.

Patrick Thomas
Director of Public Works

cc: City Council Members

Rolf Gunnarson, City Manager

Mike Adams, Assistant City Manager

Charlie Grimm, Director of Planning and Building

Fred Luedtke, Deputy Director of Public Works

August 12, 2002

Mr. Rob Rundell, Senior Regional Planner
SANDAG
401 B Street, Suite 800
San Diego, CA 92101-4231

**SUBJECT: NOTICE OF PREPARATION OF AN ENVIRONMENTAL
IMPACT REPORT FOR THE 2030 REGIONAL
TRANSPORTATION PLAN (RTP)**

Dear Mr. Rundell:

This letter provides comments from the City of Chula Vista on the Notice of Preparation (NOP) referenced above, dated July 12, 2002. We appreciate the opportunity to review and comment on the subject NOP. The City is in the midst of a comprehensive General Plan Update. As discussed with San Diego Association of Governments (SANDAG) and Metropolitan Transit Development Board (MTDB) staff, we are attempting to blend this effort with ongoing regional planning programs, such as the 2030 Regional Transportation Plan (RTP). A South County Transit First Program undertaken jointly with MTDB, the City of Chula Vista, and other local jurisdictions has begun to define future transit routes and station locations.

The following comments are presented by topic.

Traffic Impacts in Vicinity of Existing Trolley Stations

Please ensure that the Environmental Impact Report (EIR) thoroughly discusses the impacts on traffic operations to road segments and intersections located around the existing San Diego Trolley light rail stations on E Street, H Street and Palomar Street in the City of Chula Vista. Enhanced transit service along this corridor could affect traffic circulation, especially in the vicinity of existing at grade crossings on these three streets. Since the baseline land use assumption for the RTP will be a "smart growth" land use pattern, please also note that the City has identified areas around these stations as potential future smart growth areas, where residential densities and land use intensities may be increased. The City has a particular interest in how land use and transit service changes could affect road segment operations if crossing gates on heavily traveled roadways come down more frequently, and whether elevated stations would be a reasonable and viable solution.

Mr. Rob Rundle
August 12, 2002
Page 2

Ramp Operations

Please discuss how ramp operations will be affected in the same locations (E Street, H Street and Palomar Street) by the potential increased frequency of light rail service. Please also indicate whether high occupancy vehicle (HOV) managed lanes on freeways will include local ramps to access these freeway lanes.

We look forward to the opportunity to comment on the Draft EIR. Please send three copies to Mark Stephens of the City Planning Division when the Draft EIR is available for public review. If you have any questions or need additional information from the City of Chula Vista, please contact me at (619) 691-5104, or Principal Planner Mark Stephens at (619) 409-5959.

Sincerely,

Robert A. Leiter
Director of Planning and Building

cc: John Lippitt, Director of Public Works
Marilyn Pongeggi, Environmental Review Coordinator
Mark Stephens, Principal Planner
Dave Kaplan, Transportation Engineer
Toni Bates, MTDB

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U.S. Fish and Wildlife Service
Carlsbad Fish and Wildlife Office
2730 Loker Avenue, West
Carlsbad, California 92008
(760) 431-9440
FAX (760) 431-5902 + 9618



CA Dept. of Fish & Game
4949 Viewridge Avenue
San Diego, California 92123-1662
(858) 467-4201
FAX (858) 467-4235

In Reply Refer To: FWS-SDG-2987.1

Mr. Rob Rundle
Senior Regional Planner
SANDAG
401 B Street, Suite 800
San Diego, California 92101-4231

AUG 12 2002

Re: Notice of Preparation of an Environmental Impact Report for the 2030 Regional Transportation Plan for the San Diego Region, California

Dear Mr. Rundle:

The U.S. Fish and Wildlife Service (Service) and California Department of Fish and Game (Department), collectively the "Wildlife Agencies," have reviewed the referenced Notice of Preparation (NOP) regarding the 2030 Regional Transportation Plan (RTP) Environmental Impact Report (EIR). The EIR will address four major components for improving mobility: land use changes; systems development; systems management; and demand management. The RTP will identify strategies, projects, and programs in each of these four components. The RTP also will identify a "regionally significant transportation network" consisting of major highways, regional transit services, and selected regional arterials.

The primary concern and mandate of the Service is the protection of public fish and wildlife resources and their habitats. The Service is also responsible for administering the Endangered Species Act of 1973 as amended (Act). Section 7 of the Act requires Federal agencies to consult with the Service if their actions may affect a listed threatened or endangered species. Section 9 of the Act prohibits the "take" (e.g., harm, harass, pursue, injure, or kill) of federally listed wildlife species. "Harm" (i.e., "take") is further defined to include habitat modification or degradation where it kills or injures wildlife by significantly impairing essential behavioral patterns including breeding, feeding, or sheltering. "Take" can only be permitted pursuant to the pertinent language and provisions in section 7 and section 10 (a) or through a special rule under section 4(d) of the Act.

The Department is a Trustee Agency and a Responsible Agency pursuant to the California Environmental Quality Act (CEQA), Sections 15386 and 15381, respectively. As a Trustee Agency, the Department reviews proposed projects, comments on their impacts, and determines whether the mitigation measures or alternatives proposed are adequate and appropriate. Pursuant to the California Endangered Species Act (CESA) and Section 1802 of the Fish and Game Code,

Mr. Rob Rundle (FWS-SDG-2987.1)

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the Department has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants (including rare, threatened, and endangered species), and habitat necessary for biologically sustainable populations of those species. A CESA Permit (Section 2081 of the Fish and Game Code) or, if applicable, a Consistency Determination (Section 2080.1 of the Fish and Game Code), must be obtained if the project has the potential to result in "take" of species of plants or animals listed under CESA, either during construction or over the life of the project.¹

The Wildlife Agencies offer the following specific information and recommendations to assist you in planning for the preservation of sensitive wildlife species and habitat types within the San Diego Region and to assist you in complying with pertinent Federal and State statutes and laws.

1. The alternative selection process should focus on avoiding direct impacts to sensitive biological resources.
2. The selection process should demonstrate consistency with existing Federal, State, and local conservation easements; Habitat Conservation Plans and Natural Community Conservation Programs; and designated critical habitat.
3. The selection process should employ avoidance of or minimize impacts on jurisdictional waters of the United States and the Department; should encourage restoration of coastal lagoons; and should meet the habitat requirements for Federal and State listed and sensitive species within the area of influence.
4. To ensure full disclosure, and ultimately the selection of an environmentally preferred alternative, we recommend your agency include a comprehensive analysis that compares the direct, indirect, and cumulative effects of the various alternatives on natural communities. This should include an analysis of the growth inducement potential of each of the alternatives.
5. The indirect and cumulative effects analysis (as described under CEQA Guidelines, Section 15130) should identify potential links between the proposed transportation alternative and other programmed development, as well as potential impacts to area-wide resource management plans (wetlands, water quality, air quality). The scale of analysis for cumulative effects should be based on these area-wide plans, or the specific resource sphere

1 CESA Permits are issued to conserve, protect, enhance, and restore State-listed threatened or endangered species and their habitats. Early consultation is encouraged, as significant modification to a project and mitigation measures may be required to obtain a CESA permit. The Department defines "take" as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill" (Fish and Game Code, section 86). Revisions to the Fish and Game Code, effective January 1998, may require that the Department issue a separate CEQA document for the issuance of a 2081 permit unless the project CEQA document addresses all project impacts to listed species and specifies a mitigation, monitoring, and reporting program that will meet the requirements of a 2081 permit. For these reasons, the a) biological mitigation, monitoring, and reporting proposals should be of sufficient detail and resolution to satisfy the requirements for a CESA Permit, and b) a Department-approved Mitigation Agreement and Mitigation Plan are required for plants listed as rare under the Native Plant Protection Act.

Mr. Rob Rundle (FWS-SDG-2987.1)

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of influence (i.e., watershed, airshed). The indirect and cumulative effects analysis should evaluate and quantify all actions which may affect the same resources potentially affected by a proposed project. For example, the analysis should investigate how the loss and degradation of wetland habitat, and "reasonably foreseeable" development, influence on-site and downstream water quality, the physical integrity of the riparian and other habitats, and flood control. This analysis should include a discussion of any measures (e.g., flood control) that may be necessitated by the proposed transportation alternative.

In order to facilitate the evaluation of the proposed project from the standpoint of fish and wildlife protection, we request that the EIR contain the following information:

1. A complete discussion of the need and purpose for the project, including each of the project alternatives.
2. A complete description of the proposed project, including all practicable alternatives that have been considered to reduce project impacts to wetland areas, other sensitive habitat types, and fish and wildlife resources. Alternatives should include development proposals with reduced footprints that would further minimize and avoid impacts to sensitive species and habitat types on-site.
3. Specific acreage and descriptions of the types of wetland, coastal sage scrub, and other sensitive habitats that may be affected by each transportation route. Maps and tables should be included to summarize such information. The maps/figures should provide overlays of the existing habitat conservation plans [e.g., Multiple Species Conservation Program (MSCP), Multiple Habitat Conservation Program (MHCP)] and their respective preserve areas.
4. A description of the biological resources associated with each habitat type. These descriptions should include both qualitative and quantitative assessments of the resources present on each proposed transportation alternative, and include complete species lists for all biological resources on-site.
5. A list of all federally or State listed rare, threatened, endangered, or proposed candidate species, California Species-of-Special Concern and/or State Protected or Fully Protected species, and any locally unique species and sensitive habitats, that are on or near each alternative transportation route. As appropriate, surveys for sensitive species must follow established State and Federal protocols. Early and late spring plant surveys of sensitive spring blooming annuals should be included. Results of surveys should include a section which discusses the rationale for why species with a high potential for occurrence may not have been detected. A detailed discussion of these species, including information pertaining to their local status and distribution, should also be included.
6. A thorough assessment of Rare Natural Communities (Attachment 1) on site and within the area of impact, following the Department's Guidelines for Assessing Impacts to Rare Plants and Rare Natural Communities (Attachment 2; revised May 8, 2000). The Department

Mr. Rob Rundle (FWS-SDG-2987.1)

4

considers these communities as threatened habitats having both regional and local significance.

7. An analysis of how induced effects of each proposed transportation alternative may lead to or exacerbate fragmentation and isolation of aquatic and terrestrial wildlife and plants at a local and regional scale.
8. Conservation measures for potential adverse project-related effects on sensitive plants, animals, and habitats should emphasize avoidance, and where avoidance is infeasible, minimization of project effects. For unavoidable effects, off-site conservation through acquisition and preservation in perpetuity of the affected habitats should be addressed. We generally do not support the use of relocation, salvage, and/or transplantation to offset impacts on rare, threatened, or endangered species. These efforts are largely experimental and may be unsuccessful.

Specific mitigation plans should be considered to fully offset project related effects, including proposals for mitigating the cumulative effects of direct and indirect habitat loss, degradation, or modification. Project effects should be mitigated through the preservation or restoration of affected habitat types consistent with the MSCP, MHCP, and NCCP guidelines. If restoration is proposed, the objective should be to offset the project-induced qualitative and quantitative losses of wildlife habitat values. Restoration plans should be prepared by persons with specific expertise on southern California ecosystems and habitat restoration techniques. Each plan should include, at a minimum: (a) the goals of the restoration project; (b) the location of the mitigation site; (c) a diagram showing all clearing, grading and other earth moving activities; (d) the plant species to be used; (e) a schematic layout depicting the mitigation area; (f) time of year that planting will occur; (g) a description of the irrigation methodology to be employed; (h) measures to control exotic vegetation on site; (i) success criteria; (j) a detailed monitoring program; (k) contingency measures should the success criteria not be met (e.g., provisions for replanting areas where planted materials have not survived; and (l) identification of the agency that will guarantee successful restoration / creation of the mitigation habitat and provide for the conservation of the restoration site in perpetuity.

9. A thorough analysis of noise and light impacts on wildlife, including avian species, and measures to be taken to mitigate any adverse impacts resulting from increased noise and light levels during and post-construction.
10. An analysis of the effects of each transportation alternative on the hydrology of any and all riparian and wetland communities within the sphere of influence of the project including all lagoons and tidal estuarine systems. Of particular importance is an analysis of the adequacy of proposed means to convey flood, runoff (from frequent storm events), and tidal flows without affecting the physical integrity of or adding pollutants to habitat on and off site, including restoration projects.

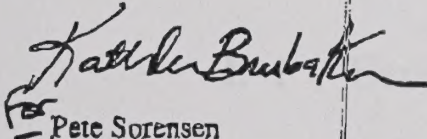
Mr. Rob Rundle (FWS-SDG-2987.1)

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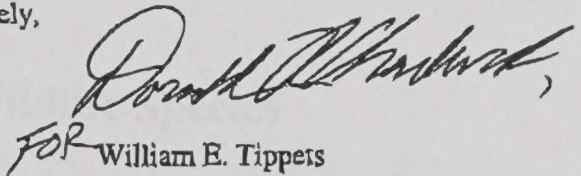
11. Methods to prevent soil erosion (e.g., incision of stream beds) and siltation of habitats on and off site, particularly adjacent to each transportation alternative, during and post-construction (i.e., long term).
12. Methods to be employed to prevent discharge and disposal of hazardous materials/wastes along new transportation routes, especially during construction.
13. Measures to be taken to perpetually protect habitat values, on and off site, that are created during restoration (mitigation). Issues that should be addressed include restrictions on active and passive land uses, proposed land dedications, endowments for land management, monitoring and management programs, control of illegal dumping, and restrictions on noise and lighting near mitigation areas.

The Wildlife Agencies appreciate the opportunity to comment on the referenced NOP. If you have any questions pertaining to these comments and recommendations, please contact John DiGregoria (Service) at (760) 431-9440, or Libby Lucas (Department) at (858) 467-4230.

Sincerely,



Pete Sorensen
Acting Assistant Field Supervisor
Carlsbad Fish and Wildlife Office
U.S. Fish and Wildlife Service



FOR William E. Tippers
Environmental Program Manager
South Coast Regional Office
California Department of Fish and Game

APPENDIX B

LISTS OF BIOLOGICAL RESOURCES

B-1 Sensitive Wildlife Species

B-2 Sensitive Plant Species

APPENDIX B
TABLE B-1
SENSITIVE WILDLIFE SPECIES

Species	Status	Habitat	Occurrence/Comments
Invertebrates			
California brackishwater snail <i>Tryonia imitator</i>		<i>Salicornia</i> marsh, lagoons, shallow channels.	
Vernal pool fairy shrimp <i>Branchinecta lynchi</i>	FT	Ephemeral wetlands; vernal pools.	
San Diego fairy shrimp <i>Branchinecta sandiegonensis</i>	FE, MSCP, NE	Ephemeral wetlands; vernal pools.	
Riverside fairy shrimp <i>Streptocephalus woottoni</i>	FE, MSCP, NE, *	Ephemeral wetlands; vernal pools.	
Tiger beetle <i>Cicindela latesignata latesignata</i>	*	Open sandy areas, beaches. Active and fast-running and flying.	
Globose dune beetle <i>Coelus globosus</i>		Native sand dunes (Tijuana estuary).	
Thorne's hairstreak butterfly <i>Mitoura thornei</i>	MSCP, NE	Southern interior cypress forest. Host plant <i>Cupressus forbesii</i> .	Only known from Otay Mountain Tecate cypress stands.
Saltmarsh skipper <i>Panoquina errans</i>	MSCP	Coastal salt marshes. Host plant <i>Distichlis spicata</i> .	Adult emergence July–September.
Harbison's dun skipper <i>Euphyes vestris harbisoni</i>	MSCP, NE, *	Woodland meadows, bogs, grasslands. Host plant <i>Carex spissa</i> .	Adult emergence late May–early July.
Wandering skipper <i>Pseudocopaeodes eunus eunus</i>		Alkali flats in lowland deserts. Host plant <i>Distichlis spicata</i> .	
Laguna Mtns. skipper <i>Pyrqus ruralis laguna</i>	FE	Meadows in pine forests. Host plant <i>Horkelia bolanderi</i> .	Adult emergence April–late July.
Hermes copper <i>Lycaena hermes</i>		Chaparral and coastal sage scrub where host plant <i>Rhamnus crocea</i> occurs.	Adult emergence late May to July.
Quino checkerspot butterfly <i>Euphydryas editha quino</i>	FE, NE	Open, dry areas in foothills, mesas, lake margins. Larval host plant <i>Plantago erecta</i> .	Adult emergence mid-January through April.
Fish			
Tidewater goby <i>Eucyclogobius newberryi</i>	FE, CSC, NE	Coastal lagoons, brackish bays at mouth of freshwater streams.	
Arroyo chub <i>Gila orcutti</i>	CSC, *	Slow-moving or backwater sections of streams, mud, or sand substrate.	
Southern Steelhead <i>Oncorhynchus mykiss</i>	FT, CSC	Freshwater streams	
Amphibians (Nomenclature from Collins 1997)			
Desert slender salamander <i>Batrachoseps aridus</i>	FE, SE	Limestone fractures in desert canyons. Only known population in Santa Rosa Mountains of Riverside County.	
Large-blotched ensatina <i>Ensatina eschscholtzii klauberi</i>	CSC	Forest and woodlands, oaks and mature chaparral in mountains of San Diego and Riverside counties.	

Species	Status	Habitat	Occurrence/Comments
Coast range newt <i>Taricha torosa torosa</i>	CSC	Under rocks, in or under logs, in rodent burrows. In or near streams, ponds, and reservoirs.	
Mountain yellow-legged frog <i>Rana muscosa</i>	CSC, *	San Diego County's only known population (in 1985) was at Mt. Palomar.	
California red-legged frog <i>Rana aurora draytonii</i>	CSC, NE	Slow-moving streams, ponds, etc., with dense vegetation cover providing shade over water surface.	
Arroyo toad <i>Bufo californicus</i>	CSC, NE	Open streamside sand/gravel flats. Quiet, shallow pools along stream edges are breeding habitat.	Nocturnal except during breeding season (March–July).
Western spadefoot <i>Spea hammondi</i>	CSC	Vernal pools, floodplains, and alkali flats within areas of open vegetation.	
Reptiles (Nomenclature from Collins 1997)			
Southwestern pond turtle <i>Clemmys marmorata pallida</i>	CSC, HT, NE	Ponds, small lakes, marshes, slow-moving, sometimes brackish water.	
San Diego banded gecko <i>Coleonyx variegatus abbotti</i>	HT	Chaparral with rocky soils and boulder outcroppings.	
Barefoot gecko <i>Coleonyx switaki</i>	ST	Rock outcrops on arid hillsides and canyons in desert scrub vegetation types.	
Sandstone night lizard <i>Xantusia henshawi gracilis</i>	CSC	Anza-Borrego Desert State Park in sandstone habitats.	
Granite spiny lizard <i>Sceloporus orcutti</i>		Granite outcrops in pine, oak, coastal sage scrub, and chaparral areas, rocky canyons.	
Coronado skink <i>Eumeces skiltonianus interparietalis</i>	CSC	Grasslands, open woodlands and forest, broken chaparral. Rocky habitats near streams.	
Southern sagebrush lizard <i>Sceloporus graciosus vandenburgianus</i>		Sagebrush, manzanita, and <i>Ceanothus</i> brushlands.	
San Diego horned lizard <i>Phrynosoma coronatum blainvillii</i>	CSC, MSCP, HT, *	Chaparral, coastal sage scrub with fine, loose soil. Partially dependent on harvester ants for forage.	
Flat-tailed horned lizard <i>Phrynosoma mcalli</i>	CSC	Dunes and sandy flats of low desert.	
Belding's orangethroat whiptail <i>Cnemidophorus hyperythrus beldingi</i>	CSC, MSCP, HT	Chaparral, coastal sage scrub with coarse sandy soils and scattered brush.	
Western coastal whiptail <i>Cnemidophorus tigris multiscutatus</i>		Sparsely vegetated areas with loose soil.	
Silvery legless lizard <i>Anniella pulchra pulchra</i>	CSC, HT	Herbaceous layers with loose soil in coastal scrub, chaparral, and open riparian. Prefers dunes and sandy washes near moist soil.	
Coastal rosy boa <i>Lichanura trivirgata roseofusca</i>		Brushland habitat with boulders.	
San Diego ringneck snake <i>Diadophis punctatus similes</i>		Moist habitats; woodlands, forest, chaparral, farms, gardens.	

Species	Status	Habitat	Occurrence/Comments
Coast patch-nosed snake <i>Salvadora hexalepis virgulata</i>	CSC	Grasslands, chaparral, sagebrush, desert scrub. Found in sandy and rocky areas.	
San Diego mountain kingsnake <i>Lampropeltis zonata pulchra</i>	CSC, HT, *	Moist woods—coniferous forest, woodland, and chaparral. Well-lit rocky streams in wooded areas.	
Two-striped garter snake <i>Thamnophis hammondi</i>	CSC, HT, *	Permanent freshwater streams with rocky bottoms. Mesic areas.	
Red diamond rattlesnake <i>Crotalus exsul</i>	CSC	Desert scrub and riparian, coastal sage scrub, open chaparral, grassland, and agricultural fields.	
Birds (Nomenclature from American Ornithologists' Union)			
Common loon (breeding) <i>Gavia immer</i>	CSC	Salt water of bays, harbors, and tidal lagoons. Migrant and winter visitor, rare to uncommon in summer.	
Western grebe <i>Aechmophorus occidentalis</i>	*	Bays, estuaries, inland lakes. Migrant and winter visitor, rare in summer, except on Sweetwater Reservoir.	
American white pelican (nesting colony) <i>Pelecanus erythrorhynchos</i>	CSC	Lagoons, bays, estuaries, freshwater ponds; inland lakes during spring migration. Migrant and winter visitor.	
California brown pelican (nesting colony) <i>Pelecanus occidentalis californicus</i>	FE, SE, CFP, MSCP	Coastal salt water, open ocean; rare vagrant inland. Non-breeding year-round visitor.	
Double-crested cormorant (rookery site) <i>Phalacrocorax auritus albociliatus</i>	CSC	Bays, lagoons, estuaries. Non-breeding year-round visitor.	
Brandt's cormorant (breeding) <i>Phalacrocorax penicillatus</i>		Coastal salt water, roosts on cliffs. Non-breeding resident, sporadic breeding in La Jolla.	
American bittern (breeding) <i>Botaurus lentiginosus</i>		Brackish and freshwater marshes. Rare and localized winter visitor, very rare in summer.	
Western least bittern <i>Ixobrychus exilis hesperis</i>	CSC	Brackish and freshwater marshes in the coastal lowland. Rare summer resident, rare in winter.	
Great blue heron (rookery site) <i>Ardea herodias</i>	*	Bays, lagoons, ponds, lakes. Non-breeding year-round visitor, some localized breeding.	
Green heron (breeding) <i>Butorides striatus</i>		Riparian woodland, lakes, ponds, brackish lagoons.	
Little blue heron (breeding) <i>Florida caerulea</i>		Very rare. Summer, fall, winter visitor. Bay, lagoons, and estuaries.	
Great egret (rookery site) <i>Ardea alba</i>	*	Lagoons, bays, estuaries. Ponds and lakes in the coastal lowland. Winter visitor, uncommon in summer.	
Reddish egret (wintering) <i>Egretta rufescens</i>	MSCP	Salt marshes, bays, estuaries. Rare in fall and winter, casual in spring and summer.	

Species	Status	Habitat	Occurrence/Comments
Greater roadrunner (breeding) <i>Geococcyx californianus</i>		Desert scrub, coastal sage scrub, chaparral. Resident.	
Western burrowing owl (burrow sites) <i>Speotyto cunicularia hypugaea</i>	CSC, MSCP, NE	Grassland, agricultural land, coastal dunes. Require rodent burrows. Declining resident.	
California spotted owl <i>Strix occidentalis occidentalis</i>	FSS, CSC	Dense coniferous woodland. Localized resident.	
Long-eared owl (nesting) <i>Asio otis</i>	CSC	Riparian woodland, oak woodland, tamarisk woodland. Rare resident and winter visitor. Localized breeding.	
Short-eared owl (nesting) <i>Asio flammeus</i>	CSC	Salt marshes, open grassland, agricultural areas. Rare and localized winter visitor.	Only one breeding record in San Diego County.
Lesser nighthawk (breeding) <i>Chordeiles acutipennis</i>		Open, bare ground, desert scrub, coastal sage scrub, chaparral, agricultural areas. Summer resident and migrant, casual in winter.	
Black swift (nesting) <i>Cypseloides niger borealis</i>	CSC	Coastal bluffs.	
Downy woodpecker (breeding) <i>Picoides pubescens</i>		Lowland riparian woodland. Resident.	
Southwestern willow flycatcher <i>Empidonax traillii eximius</i>	FE, SE, FSS, MSCP, NE	Nesting restricted to willow thickets. Also occupies other woodlands. Rare spring and fall migrant, rare summer resident. Extremely localized breeding.	
Vermilion flycatcher <i>Pyrocephalus rubinus</i>	CSC	Agricultural areas, parks, ponds, rivers. Rare fall and spring migrant, winter visitor, summer resident. Breeding rare.	
California horned lark <i>Eremophila alpestris actia</i>	CSC	Sandy shores, mesas, disturbed areas, grasslands, agricultural lands, sparse creosote bush scrub.	
Bank swallow <i>Riparia riparia</i>	ST	Steep riverbanks, gravel pits. Nest in colonies.	
Purple martin (nesting) <i>Progne subis</i>	CSC	Breed in coniferous woodland. Occur in coastal lowland, foothill, and mountain zones. Localized breeding.	
Coastal cactus wren <i>Campylorhynchus brunneicapillus couesi</i>	CSC, MSCP, NE, *	Maritime succulent scrub, coastal sage scrub with <i>Opuntia</i> thickets. Rare localized resident.	
Blue-gray gnatcatcher (breeding) <i>Poliophtila caerulea</i>		Riparian undergrowth, weedy brush, desert wash thickets, chaparral. Migrant and winter visitor, localized summer resident, localized breeding.	
Coastal California gnatcatcher <i>Poliophtila californica californica</i>	FT, CSC, MSCP	Coastal sage scrub, maritime succulent scrub. Resident.	
Black-tailed gnatcatcher <i>Poliophtila melanura</i>		Desert brush, mesquite, dry washes. Resident.	
Bendire's thrasher <i>Toxostoma bendirei</i>	CSC	Most records from Tijuana River valley. Rare fall migrant, casual winter visitor.	

Species	Status	Habitat	Occurrence/Comments
Crissal thrasher <i>Toxostoma dorsale</i>	CSC	Mesquite thickets in Borrego Springs area. Rare resident.	
Le Conte's thrasher <i>Toxostoma lecontei</i>	CSC	Desert washes, creosote bush scrub. Uncommon resident.	
Loggerhead shrike <i>Lanius ludovicianus</i>	CSC	Open foraging areas near scattered bushes and low trees.	
Least Bell's vireo (nesting) <i>Vireo bellii pusillus</i>	FE, SE, MSCP, NE	Willow riparian woodlands. Summer resident.	
Gray vireo (nesting) <i>Vireo vicinior</i>	CSC	Chamise and <i>Ceanothus</i> -dominated chaparral. Uncommon and localized summer resident.	
Yellow warbler (nesting) <i>Dendroica petechia brewsteri</i>	CSC	Breeding restricted to riparian woodland. Spring and fall migrant, localized summer resident, rare winter visitor.	
Yellow-breasted chat (nesting) <i>Icteria virens</i>	CSC	Dense riparian woodland. Localized summer resident.	
Summer tanager (nesting) <i>Piranga rubra</i>	CSC	Parks, residential areas, riparian woodland. Rare migrant, winter visitor, casual through summer.	
Blue grosbeak (breeding) <i>Guiraca caerulea</i>		Riparian woodland edges, mule fat thickets. Summer resident, spring and fall migrant, winter visitor.	
Southern California rufous-crowned sparrow <i>Aimophila ruficeps canescens</i>	CSC, MSCP	Coastal sage scrub, chaparral, grassland. Resident.	
Bell's sage sparrow <i>Amphispiza belli belli</i>		Chaparral, coastal sage scrub. Localized resident.	
Belding's savannah sparrow <i>Passerculus sandwichensis beldingi</i>	SE, MSCP, NE	Salt marshes, lagoons dominated by <i>Salicornia</i> . Resident.	
Large-billed savannah sparrow <i>Passerculus sandwichensis rostratus</i>	CSC	Marshes. Very rare in San Diego County.	
Grasshopper sparrow (nesting) <i>Ammodramus savannarum</i>		Tall grass areas. Localized summer resident, rare in winter.	
California gray-headed junco (nesting) <i>Junco hyemalis caniceps</i>	CSC	Most frequent in mountains but found in many habitats. Winter visitor.	
Tricolored blackbird <i>Agelaius tricolor</i>	CSC, MSCP	Freshwater marshes, agricultural areas, lakeshores, parks. Localized resident.	
Western bluebird <i>Sialia mexicana</i>	MSCP	Open woodlands, farmlands, orchards.	
Wood stork <i>Mycteria americana</i>	CSC	Wet meadows, marsh, shallow water.	
Fulvous whistling duck <i>Dendrocygna bicolor</i>	CSC	Freshwater marsh, flooded agriculture fields.	
California gull <i>Larus californicus</i>	CSC	Estuaries, lakes and rivers with shoreline roosts.	
Gull-billed tern <i>Sterna nilotica</i>	CSC	Salt marsh, estuaries, bays, wetlands.	

Species	Status	Habitat	Occurrence/Comments
Virginia warbler <i>Vermivora virginiae</i>	CSC	Woodland or forests of scrub, oak, willow, alder, or pine.	
Mammals (Nomenclature from Jones et al. 1982)			
Mexican long-tongued bat <i>Choeronycteris mexicana</i>	CSC, *	Sightings in San Diego County very rare. Migratory.	
Pallid bat <i>Antrozous pallidus</i>	CSC	Arid deserts and grasslands. Shallow caves, crevices, rock outcrops, buildings, tree cavities. Especially near water.	Colonial. Audible echolocation signal.
Spotted bat <i>Euderma maculatum</i>	CSC	Wide variety of habitats. Caves, crevices, trees.	Audible echolocation signal.
Southwestern cave myotis <i>Myotis velifer brevis</i>	CSC	Mostly desert dweller along the Colorado River in southeastern California. Caves, buildings, tree hollows, rock crevices.	Colonial. Recorded from Dulzura.
Pale big-eared bat <i>Corynorhinus townsendii pallescens</i>	CSC	Caves, mines, buildings. Found in a variety of habitats, arid and mesic.	Individual or colonial. Extremely sensitive to disturbance.
Townsend's western big-eared bat <i>Corynorhinus townsendii townsendii</i>	CSC	Caves, mines, buildings. Found in a variety of habitats, arid and mesic.	Individual or colonial. Extremely sensitive to disturbance.
Western mastiff bat <i>Eumops perotis californicus</i>	CSC	Woodlands, rocky habitat, arid and semiarid lowlands, cliffs, crevices, buildings, tree hollows.	Audible echolocation signal.
Pocketed free-tailed bat <i>Nyctinomops femorosacca</i>	CSC, *	Normally roost in crevice in rocks, slopes, cliffs. Lower elevations in San Diego and Imperial Counties.	Colonial. Leave roosts well after dark.
Big free-tailed bat <i>Nyctinomops macrotis</i>	CSC	Rugged, rocky terrain. Roost in crevices, buildings, caves, tree holes. Very rare in San Diego County.	Colonial. Migratory.
San Diego black-tailed jackrabbit <i>Lepus californicus bennettii</i>	CSC	Open areas of scrub, grasslands, agricultural fields.	
Stephens' kangaroo rat <i>Dipodomys stephensi</i>	FE, ST	Grassland, open areas.	
Pacific little pocket mouse <i>Perognathus longimembris pacificus</i>	FE, CSC, NE	Open coastal sage scrub; fine, alluvial sands near ocean.	
Jacumba little pocket mouse <i>Perognathus longimembris internationalis</i>	CSC	Desert riparian, desert scrub, desert wash, coastal scrub, and sagebrush.	
White-eared pocket mouse <i>Perognathus alticola alticola</i>	CSC	Known only from Little Bear Valley in San Bernardino Mountains.	Possibly a relict species.
Dulzura California pocket mouse <i>Chaetodipus californicus femoralis</i>	CSC	Scrub, woodland, and grassland habitats.	
Northwestern San Diego pocket mouse <i>Chaetodipus fallax fallax</i>	CSC	Coastal sage scrub, grasslands.	
Pallid San Diego pocket mouse <i>Chaetodipus fallax pallidus</i>	CSC	Eastern slopes of coast range mountains: Victorville-Twenty-nine Palms-Jacumba.	

Species	Status	Habitat	Occurrence/Comments
Southern grasshopper mouse <i>Onychomys torridus ramona</i>	CSC	Alkali desert scrub & desert scrub preferred. Can also occur in coastal sage scrub, mixed chaparral, sagebrush, low sage, and bitterbrush. Low to moderate shrub cover preferred.	
San Diego desert woodrat <i>Neotoma lepida intermedia</i>	CSC	Coastal sage scrub and chaparral.	
Ringtail <i>Bassariscus astutus</i>	CFP	Cliffs, rocky ravines, chaparral communities.	
American badger <i>Taxidea taxus</i>	CSC, MSCP	Grasslands, Sonoran desert scrub.	
Mountain lion <i>Felis concolor</i>	CFP, MSCP	Many habitats.	
Peninsular bighorn sheep <i>Ovis canadensis cremnobates</i>	FE, ST, FSS, CFP	Open, rocky habitat, sparse vegetated desert slopes. Rocky ridges.	Mainly within San Jacintos , Santa Rosas, San Ysidros (San Diego County).
Southern mule deer <i>Odocoileus hemionus fuliginata</i>	MSCP	Many habitats.	

STATUS CODES

Listed/Proposed

- FE = Listed as endangered by the federal government
FPT = Federally proposed threatened
FT = Listed as threatened by the federal government
SE = Listed as endangered by the state of California
ST = Listed as threatened by the state of California

Other

- BEPA = Bald and Golden Eagle Protection Act
CFP = California fully protected species
CSC = California Department of Fish and Game species of special concern
FSS = Federal (BLM and USFS) sensitive species
HT = San Diego Herpetological Society (1980) threatened
MSCP = Multiple Species Conservation Program covered species
NE = MSCP narrow endemic species
* = Taxa listed with an asterisk fall into one or more of the following categories:
- Taxa considered endangered or rare under Section 15380(d) of CEQA guidelines
 - Taxa that are biologically rare, very restricted in distribution, or declining throughout their range
 - Population(s) in California that may be peripheral to the major portion of a taxon's range, but which are threatened with extirpation within California
 - Taxa closely associated with a habitat that is declining in California at an alarming rate (e.g., wetlands, riparian, old growth forests, desert aquatic systems, native grasslands)

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APPENDIX B
TABLE B-2
SENSITIVE PLANT SPECIES

Species	State/ Federal Status	CNPSList/ Code	City of San Diego Status	Typical Habitat/Comments
<i>Acanthomintha ilicifolia</i> San Diego thornmint	CE/FT	1B/2-3-2	NE,MSCP	Chaparral, coastal sage scrub, valley and foothill grassland/clay soils
<i>Achnatherum diegoensis</i> (= <i>Stipa diegoensis</i>) San Diego County needle grass	-/-	4/1-2-1		Rocky soils; chaparral, coastal sage scrub; often near streams
<i>Adolphia californica</i> California adolphia	-/-	2/1-2-1		Coastal sage scrub, chaparral, clay soils
<i>Agave shawii</i> Shaw's agave	-/-	2/3-3-1	NE,MSCP	Maritime succulent scrub
<i>Ambrosia chenopodiifolia</i> San Diego bur-sage	-/-	2/2-2-1		Coastal sage scrub, maritime succulent scrub
<i>Ambrosia pumila</i> San Diego ambrosia	-/-	1B/3-2-2	NE,MSCP	Coastal sage scrub, valley and foothill grassland
<i>Aphanisma blitoides</i> Aphanisma	-/-	1B/2-2-2	NE,MSCP	Coastal bluff scrub, coastal sage scrub, alkaline areas
<i>Arctostaphylos glandulosa</i> ssp. <i>crassifolia</i> Del Mar manzanita	-/FE	1B/3-3-2	MSCP	Coastal chaparral
<i>Arctostaphylos otayensis</i> Otay manzanita	-/-	1B/3-2-3	MSCP	Chaparral
<i>Arctostaphylos peninsularis</i> Peninsular manzanita	-/-	2/2-2-1		Chaparral
<i>Artemisia palmeri</i> San Diego sagewort	-/-	2/2-2-1		Coastal sage scrub, chaparral, riparian
<i>Astragalus crotalariae</i> Salton milk vetch	-/-	4/1-1-2		Sonoran desert scrub
<i>Astragalus deanei</i> Dean's milk vetch	-/-	1B/3-3-3		Chaparral
<i>Astragalus douglasii</i> var. <i>perstrictus</i> Jacumba milk vetch	-/-	1B/2-2-2		Chaparral, valley and foothill grassland
<i>Astragalus insularis</i> var. <i>harwoodii</i> Harwood's milk vetch	-/-	2/2-2-1		Desert dunes
<i>Astragalus lentiginosus</i> var. <i>borreganus</i> Borrogo milk vetch	-/-	4/1-1-1		Mojavean desert scrub, Sonoran desert scrub/sandy sites
<i>Astragalus magdalenae</i> var. <i>peirsonii</i> Peirson's milk vetch	CE/FT	1B/2-2-2		Desert dunes
<i>Astragalus oocarpus</i> Descanso milk vetch	-/-	1B/3-2-3		Chaparral, cismontane wood-land, meadows
<i>Astragalus tener</i> var. <i>titi</i> Coastal dunes milk vetch	CE/FE	1B/3-3-3	NE,MSCP	Coastal dunes
<i>Atriplex pacifica</i> South coast saltscale	-/-	1B/3-2-2		Diegan sage scrub
<i>Baccharis vanessae</i> Encinitas coyote bush	CE/FT	1B/2-3-3	NE,MSCP	Chaparral
<i>Berberis fremonti</i> (= <i>Mahonia higginsiae</i>) Higgin's barberry, Fremont barberry	-/-	3		Chaparral
<i>Berberis nevinii</i> (= <i>Mahonia nevinii</i>) Nevin's barberry	CE/FE	1B/3-3-3	MSCP	Chaparral, coastal sage scrub
<i>Bergerocactus emoryi</i> Golden-spined cereus	-/-	2/2-2-1		Coastal sage scrub
<i>Boykinia rotundifolia</i> Round-leaved boykinia	-/-	4/1-1-3		Chaparral (mesic), riparian woodland
<i>Brodiaea filifolia</i> Thread-leaved brodiaea	CE/FT	1B/3-3-3	NE,MSCP	Valley and foothill grassland, vernal pools
<i>Brodiaea orcuttii</i> Orcutt's brodiaea	-/-	1B/1-3-2	MSCP	Closed-cone coniferous forest, meadows, cismontane wood-land, valley and foothill grass-land, vernal pools
<i>Calamagrostis koelerioides</i> Dense reed grass	-/-		MSCP	Closed-cone coniferous forest, chaparral (gabbro), cismontane woodland
<i>Calandrinia maritima</i> Seaside calandrinia	-/-	4/1-2-1		Coastal bluff scrub, valley and foothill grassland
<i>Calliandra eriophylla</i> Fairyduster	-/-	2/3-1-1		Sonoran desert scrub

Species	State/ Federal Status	CNPSList/ Code	City of San Diego Status	Typical Habitat/Comments
<i>Calochortus catalinae</i> Catalina mariposa lily	-/-	4/1-2-3		Chaparral, coastal sage scrub, cismontane woodland, valley and foothill grassland
<i>Calochortus dunnii</i> Dunn's mariposa lily	CR/-	1B/2-2-2	NE,MSCP	Closed-cone coniferous forest, chaparral
<i>Calochortus palmeri</i> var. <i>munzii</i> Munz's mariposa lily	-/-	1B/3-2-3		Meadows, lower coniferous forest; endemic to San Jacinto Mountains
<i>Calochortus weedii</i> var. <i>intermedius</i> Mariposa lily	-/-	1B/2-2-3		Dry, rocky, open slopes; likely rarer than presumed; found in east Orange, west Riverside, and southwest San Bernardino Counties
<i>Carnegiea gigantea</i> (= <i>Cereus giganteus</i>) Saguaro	-/-	2/3-2-1		Sonoran desert scrub
<i>Cassia covesii</i> Cove's cassia	-/-	2/2-2-1		Sonoran desert scrub
<i>Castilleja lasiorhynchus</i> (= <i>Orthocarpus lasiorhynchus</i>) San Bernardino Mtns. owl's clover	-/-	1B/1-2-3		Meadows, pebble (pavement) plain, upper montane coniferous forest/mesic
<i>Caulanthus heterophyllus</i> var. <i>heterophyllus</i> (= <i>Caulanthus stenocarpus</i>) Slenderpod jewelflower	CR/-	-/- - -	MSCP	Chaparral (often in recent burns)
<i>Caulanthus simulans</i> Payson's jewelflower	-/-	4/1-2-3		Chaparral, coastal sage scrub
<i>Ceanothus cyaneus</i> Lakeside ceanothus	-/-	1B/3-2-2	NE,MSCP	Closed-cone coniferous forest, chaparral
<i>Ceanothus verrucosus</i> Wart-stemmed ceanothus	-/-	2/1-2-1	MSCP	Chaparral
<i>Centromadia parryi</i> spp. <i>Australis</i> Southern Tarplant	-/-	1B/3-3-2		Valley and foothill grasslands, alkaline locales, salt marshes
<i>Chaenactis parishii</i> Parish's chaenactis	-/-	4/1-1-2		Chaparral
<i>Chamaebatia australis</i> Southern mountain misery	-/-	4/1-2-1		Chaparral
<i>Chamaesyce arizonica</i> Arizona spurge	-/-	2/2-1-1		Sonoran desert scrub
<i>Chorizanthe orcuttiana</i> Orcutt's spineflower	CE/FE	1B/3-3-3		Coastal sage scrub; Del Mar to Point Loma, San Diego County
<i>Chorizanthe polygonoides</i> var. <i>Lonispinia</i> Long-spined spineflower	-/-	1B/3-3-2		Vernal pool complex and tidepools
<i>Chorizanthe procumbens</i> var. <i>albiflora</i> Fallbrook spineflower	-/-	4/1-2-2		Chaparral, pinyon and juniper woodland
<i>Clarkia delicata</i> Delicate clarkia	-/-	2/1-2-1		Oak woodland, chaparral
<i>Comarostaphylis diversifolia</i> ssp. <i>diversifolia</i> Summer holly	-/-	1B/2-2-2		Chaparral
<i>Cordylanthus maritimus</i> ssp. <i>maritimus</i> Salt marsh bird's-beak	CE/FE	1B/2-2-2	MSCP	Coastal salt marsh
<i>Cordylanthus orcuttianus</i> Orcutt's bird's-beak	-/-	2/3-3-1	MSCP	Coastal sage scrub
<i>Coreopsis maritima</i> Sea dahlia	-/-	2/2-2-1		Coastal sage scrub
<i>Cryptantha costata</i> Ribbed cryptantha	-/-	4/1-1-2		Sonoran desert scrub
<i>Cryptantha ganderi</i> Gander's cryptantha	-/-	1B/3-3-2		Sonoran desert scrub
<i>Cupressus forbesii</i> Tecate cypress	-/-	1B/3-2-2	MSCP	Closed-cone coniferous forest
<i>Cupressus arizonica</i> ssp. <i>arizonica</i> (= <i>Cupressus stephensonii</i>) Cuyamaca cypress	-/-	1B/3-3-3		Closed-cone coniferous forest
<i>Delphinium hesperium</i> ssp. <i>cuyamaca</i> Cuyamaca larkspur	CR/-	1B/2-2-3		Grassland, yellow pine forest
<i>Delphinium parishii</i> ssp. <i>subglobosum</i> Parish's larkspur	-/-	4/1-1-2		Chaparral, pinyon and juniper woodland, Sonoran desert scrub
<i>Dichondra occidentalis</i> Western dichondra	-/-	4/1-2-1		Chaparral, cismontane wood-land, coastal sage scrub, valley and foothill grassland
<i>Downingia concolor</i> var. <i>brevior</i> Cuyamaca Lake downingia	CE/-	1B/3-3-3		Shores of Cuyamaca Lake, San Diego County
<i>Dudleya alainae</i> Banner dudleya	-/-	3/3-2-3		Lower montane coniferous forest
<i>Dudleya attenuata</i> ssp. <i>orcuttii</i> Orcutt's dudleya	-/-	2/3-3-1		Coastal sage scrub

Species	State/ Federal Status	CNPSList/ Code	City of San Diego Status	Typical Habitat/Comments
<i>Dudleya blochmaniae</i> ssp. <i>blochmaniae</i> Blochman's dudleya	-/-	1B/2-2-2		Coastal sage scrub
<i>Dudleya blochmaniae</i> ssp. <i>brevifolia</i> (= <i>Dudleya brevifolia</i>) Shortleaved dudleya	CE/-	1B/3-3-3	NE,MSCP	Chaparral, coastal sage scrub (Torrey sandstone)
<i>Dudleya multicaulis</i> Many-stemmed liveforever	-/-	1B/1-2-3		Chaparral, coastal sage scrub, valley and foothill grassland
<i>Dudleya variegata</i> Variegated dudleya	-/-	1B/1-2-2	NE,MSCP	Chaparral, coastal sage scrub
<i>Dudleya viscida</i> Sticky-leaved liveforever	-/-	1B/3-2-3	MSCP	Coastal sage scrub
<i>Ericameria palmeri</i> var. <i>palmeri</i> (= <i>Haplopappus palmeri</i> ssp. <i>palmeri</i>) Palmer's ericameria	-/-	2/2-2-1	NE,MSCP	Coastal sage scrub
<i>Eryngium aristulatum</i> var. <i>parishii</i> San Diego button celery	CE/FE	1B/2-3-2	MSCP	Vernal pools, marshes
<i>Erysimum ammodophilum</i> Coast wallflower	-/-	1B/2-2-3	MSCP	Coastal dunes
<i>Eucnide rupestris</i> Rock nettle	-/-	2/3-2-1		Sonoran desert scrub
<i>Euphorbia misera</i> Cliff spurge	-/-	2/2-2-1		Coastal sage scrub
<i>Ferocactus viridescens</i> Coast barrel cactus	-/-	2/1-3-1	MSCP	Chaparral, coastal sage scrub, valley and foothill grassland
<i>Frankenia palmeri</i> Palmer's frankenia	-/-	2/3-3-1		Coastal salt marsh
<i>Fremontodendron mexicanum</i> Mexican flannelbush	CR/FE	1B/3-2-2		Closed-cone coniferous forest, chaparral, cismontane woodland
<i>Galium angustifolium</i> ssp. <i>borregoense</i> Borrego bedstraw	CR/-	1B/3-2-3		Sonoran desert scrub
<i>Geraea viscida</i> Sticky geraea	-/-	2/2-1-1		Chaparral
<i>Gilia caruifolia</i> Caraway-leaved gilia	-/-	4/1-1-1		Chaparral, lower montane coniferous forest
<i>Githopsis diffusa</i> ssp. <i>filicaulis</i> Mission Canyon bluecup	-/-	1B/3-3-2		Chaparral
<i>Grindelia hirsutula</i> var. <i>hallii</i> (= <i>Grindelia</i> <i>hallii</i>) San Diego gumplant	-/-	1B/2-2-3		Chaparral, lower montane coniferous forest, meadows
<i>Harpagonella palmeri</i> var. <i>palmeri</i> Palmer's grappling hook	-/-	2/1-2-1		Chaparral, coastal sage scrub, valley and foothill grassland
<i>Hazardia orcuttii</i> Orcutt's hazardia	-/-	1B/3-3-2		Chaparral, coastal sage scrub
<i>Hemizonia conjugens</i> Otay tarplant	CE/FT	1B/3-3-2	NE,MSCP	Coastal sage scrub
<i>Hemizonia floribunda</i> Tecate tarplant	-/-	1B/2-2-2		Coastal sage scrub
<i>Hemizonia parryi</i> ssp. <i>australis</i> (= <i>Hemizonia</i> <i>australis</i>) Southern tarplant	-/-	1B/3-3-2		Valley and foothill grassland
<i>Hemizonia pungens</i> ssp. <i>laevis</i> (= <i>Hemizonia</i> <i>laevis</i>) Smooth tarplant	-/-	1B/2-3-3		Valley and foothill grassland
<i>Heuchera brevistaminea</i> Laguna Mountains alumroot	-/-	1B/3-1-3		Broad-leaved upland forest, chaparral
<i>Heuchera hirsutissima</i> Shaggy-haired alumroot	-/-	1B/3-1-3		Coniferous forest; endemic to Riverside County
<i>Heuchera rubescens</i> var. <i>versicolor</i> (= <i>Heuchera leptomeria</i> var. <i>peninsularis</i>) San Diego County alumroot	-/-	2/3-1-1		Dry rocky areas 1500-4000 meters; Cuyamaca Peak; San Diego County
<i>Horkelia truncata</i> Ramona horkelia	-/-	1B/3-1-2		Upper montane coniferous forest
<i>Hulsea californica</i> San Diego sunflower	-/-	1B/2-1-3		Lower montane coniferous forest, upper montane coniferous forest
<i>Ipomopsis tenuifolia</i> Slender-leaved ipomopsis	-/-	2/2-1-1		Chaparral, pinyon and juniper woodland, Sonoran desert scrub
<i>Iva hayesiana</i> San Diego marsh elder	-/-	2/2-2-1		Riparian, playas
<i>Isocoma menziesii</i> var. <i>decumbens</i> Decumbent goldenbush	-/-	1B/2-2-2		Coastal sage scrub intermixed with grasslands
<i>Juncus acutus</i> ssp. <i>leopoldii</i> (= <i>Juncus acutus</i> ssp. <i>sphaerocarpus</i>) Spiny rush	-/-	4/1-2-1		Coastal dunes (mesic), meadows (alkaline), coastal salt marsh
<i>Lasthenia glabrata</i> ssp. <i>Coulteri</i> Coulter's goldfields	-/-		1B/2-3-2	Tidal marsh, vernal pools, alkaline marsh
<i>Lathyrus splendens</i> Pride-of-California	-/-	4/1-1-2		Chaparral

Species	State/ Federal Status	CNPSList/ Code	City of San Diego Status	Typical Habitat/Comments
<i>Lepechinia cardiophylla</i> Heart-leaved pitcher sage	-/-	1B/3-1-2	NE,MSCP	Closed-cone coniferous forest, chaparral, cismontane woodland
<i>Lepechinia ganderi</i> Gander's pitcher sage	-/-	1B/3-2-2	NE,MSCP	Closed-cone coniferous forest, chaparral, coastal sage scrub, valley and foothill grassland
<i>Lepidium flavum</i> var. <i>felipense</i> Borrego Valley pepper-grass	-/-	1B/3-2-3		Sonoran desert scrub
<i>Lepidium virginicum</i> var. <i>robinsonii</i> Robinson's pepper-grass	-/-	1B/1-1-2		Chaparral, coastal sage scrub
<i>Lessingia filaginifolia</i> var. <i>filaginifolia</i> (= <i>Corethrogyne filaginifolia</i> var. <i>incana</i>) San Diego sand aster	-/-	1B/2-2-2		Coastal sage scrub, chaparral
<i>Lessingia filaginifolia</i> var. <i>filaginifolia</i> (= <i>Corethrogyne filaginifolia</i> var. <i>linifolia</i>) Del Mar Mesa sand aster	-/-	1B/3-2-3	MSCP	Chaparral, coastal sage scrub
<i>Lessingia filaginifolia</i> var. <i>incana</i> San Diego sand aster	-/-	1B		Coastal sage scrub and chaparral on sandy substrate
<i>Lessingia glandulifera</i> var. <i>tomentosa</i> Warner Springs lessingia	-/-	2/3-1-1		Sandy soils; Warner Ranch; San Diego County
<i>Lilium parryi</i> Lemon lily	-/-	1B/2-2-2		Meadows (mesic), riparian forest
<i>Limnanthes gracilis</i> var. <i>parishii</i> Parish's meadowfoam	CE/-	1B/2-2-3		Meadows (vernally mesic)
<i>Linanthus bellus</i> Desert beauty	-/-	2/2-1-1		Chaparral
<i>Linanthus orcuttii</i> Orcutt's linanthus	-/-	1B/3-1-2		Chaparral, lower montane coniferous forest
<i>Lotus crassifolius</i> var. <i>otayensis</i> Otay Mountain lotus	-/-	1B/3-3-3		Chaparral
<i>Lotus nuttallianus</i> Nuttall's lotus	-/-	1B/3-3-2	MSCP	Coastal dunes, coastal sage scrub
<i>Lycium parishii</i> Parish's desert-thorn	-/-	2/2-1-1		Coastal sage scrub, Sonoran desert scrub
<i>Lyrocarpa coulteri</i> var. <i>palmeri</i> Coulter's lyrepod	-/-	4/1-1-1		Sonoran desert scrub
<i>Machaeranthera asteroides</i> var. <i>lagunensis</i> Laguna Mountains aster	CR/-	1B/3-3-1		Lower montane coniferous forest
<i>Machaeranthera juncea</i> (= <i>Haplopappus junceus</i>) Rushlike bristleweed	-/-	4/1-1-1		Chaparral, coastal sage scrub
<i>Malacothamnus aboriginum</i> Indian Valley bush mallow	-/-	1B/2-2-3		Cismontane woodland
<i>Malperia tenuis</i> Brown turbans	-/-	2/3-1-1		Sonoran desert scrub
<i>Matelea parvifolia</i> Spearleaf	-/-	2/3-1-1		Mojavean desert scrub, Sonoran desert scrub
<i>Mentzelia hirsutissima</i> (= <i>Mentzelia hirsutissima</i> var. <i>stenophylla</i>) Hairy stickleaf	-/-	2/2-1-1		Sonoran desert scrub
<i>Mimulus aurantiacus</i> (= <i>Mimulus aridus</i>) Low bush monkeyflower	-/-	4/1-1-2		Chaparral
<i>Mimulus clevelandii</i> Cleveland's bush monkeyflower	-/-	4/1-2-2		Chaparral, lower montane coniferous forest
<i>Mimulus diffusus</i> Palomar monkeyflower	-/-	4/1-1-1		Chaparral, lower montane coniferous forest
<i>Mirabilis tenuiloba</i> Long-lobed four-o'clock	-/-	4/1-1-1		Sonoran desert scrub
<i>Monardella hypoleuca</i> ssp. <i>lanata</i> Felt-leaved rock mint	-/-	1B/2-2-2	MSCP	Chaparral
<i>Monardella linoides</i> ssp. <i>viminea</i> Willowy monardella	CE/FE	1B/2-3-2	NE,MSCP	Riparian scrub
<i>Monardella macrantha</i> ssp. <i>hallii</i> Hall's monardella	-/-	1B/2-1-3		Broad-leaved upland forest, chaparral, lower montane coniferous forest
<i>Muilla clevelandii</i> San Diego goldenstar	-/-	1B/2-2-2	MSCP	Chaparral, coastal sage scrub, valley and foothill grassland, vernal pools

Species	State/ Federal Status	CNPSList/ Code	City of San Diego Status	Typical Habitat/Comments
<i>Myosurus minimus</i> ssp. <i>apus</i> Little mousetail	-/-	3/2-3-2		Vernal pools
<i>Navarretia fossalis</i> Spreading navarretia	-/FT	1B/2-3-2	NE,MSCP	Vernal pools
<i>Nemacaulis denudata</i> Coast woolly-heads	-/-	2/2-2-2		Mildly protected coastal sand dunes
<i>Nolina interrata</i> Dehesa bear-grass	CE	1B/3-3-2	NE,MSCP	Chaparral (ultramafic)
<i>Ophioglossum californicum</i> (= <i>Ophioglossum lusitanicum</i> ssp. <i>californicum</i>) California adder's tongue fern	-/-	4/1-2-2		Clay mesa soils
<i>Opuntia parryi</i> (= <i>Opuntia parryi</i> var. <i>serpentina</i>) Snake cholla	-/-	1B/3-3-2	NE,MSCP	Chaparral, coastal sage scrub
<i>Opuntia ramosissima</i> (= <i>Opuntia wigginsii</i>) Wiggin's cholla	-/-	3/3-1-2		Sonoran desert scrub
<i>Orcuttia californica</i> California Orcutt grass	CE/FE	1B/3-3-2	NE,MSCP	Vernal pools
<i>Ornithostaphylos oppositifolia</i> Baja California birdbrush	-/-	2/3-3-1		Chaparral
<i>Orobanche parishii</i> ssp. <i>brachyloba</i> Short-lobed broomrape	-/-	1B/2-2-2		Coastal bluff scrub, coastal dunes, upper coniferous forest/mesic
<i>Penstemon thurberi</i> Thurber's beardtongue	-/-	4/1-2-1		Joshua tree woodland, pinyon and juniper woodland, Sonoran desert scrub
<i>Perideridia gairdneri</i> ssp. <i>gairdneri</i> Gairdner's yampah	-/-	1B/1-2-3		Broad-leaved upland forest, chaparral
<i>Pilosyles thurberi</i> Thurber's pilostyles	-/-	4/1-1-1		Sonoran desert scrub
<i>Pinus torreyana</i> ssp. <i>torreyana</i> Torrey pine	-/-	1B/3-2-3	MSCP	Closed-cone coniferous forest, southern maritime chaparral
<i>Pogogyne abramsii</i> San Diego mesa mint	CE/FE	1B/2-3-3	NE,MSCP	Vernal pools
<i>Pogogyne nudiuscula</i> Otay mesa mint	CE/FE	1B/3-3-2	NE,MSCP	Vernal pools
<i>Polygala cornuta</i> var. <i>fishiae</i> Fish's milkwort	-/-	4/1-1-2		Cismontane woodland, riparian woodland
<i>Proboscidea althaeifolia</i> Desert unicorn plant	-/-	4/1-1-1		Sonoran desert scrub
<i>Quercus dumosa</i> Nuttall's scrub oak	-/-	1B/2-3-2		Coastal chaparral
<i>Quercus engelmannii</i> Engelmann oak	-/-	4/1-2-2		Cismontane woodland
<i>Ribes canthariforme</i> Moreno currant	-/-	1B/3-1-3		Chaparral
<i>Romneya coulteri</i> Coulter's matilija poppy	-/-	4/1-2-3		Coastal sage scrub
<i>Rorippa gambellii</i> Gambel's watercress	CT/FE	1B/3-3-2		Marshes and swamps
<i>Rosa minutifolia</i> Small-leaved rose	CE/-	2/3-3-1	MSCP	Coastal sage scrub
<i>Rubus glaucifolius</i> var. <i>ganderi</i> Cuyamaca raspberry	-/-	1B/3-1-3		Lower montane coniferous forest
<i>Rupertia rigida</i> (= <i>Psoralea rigida</i>) Parish's rupertia	-/-	4/1-1-2		Chaparral, lower montane coniferous forest
<i>Salvia eremostachya</i> Desert sage	-/-	4/1-1-1		Sonoran desert scrub
<i>Salvia munzii</i> Munz's sage	-/-	2/2-2-1		Coastal sage scrub
<i>Satureja chandleri</i> San Miguel savory	-/-	4		Chaparral, riparian, and oak woodlands
<i>Selaginella cinerascens</i> Ashy spike-moss	-/-	4/1-2-1		Chaparral, coastal sage scrub
<i>Senecio ganderi</i> Gander's butterweed	CR/-	1B/3-2-3	MSCP	Chaparral (ultramafic)
<i>Solanum tenuilobatum</i> Narrow-leaved nightshade	-/-		MSCP	Closed-cone coniferous forest, chaparral
<i>Streptanthus bernardinus</i> Laguna Mountains jewelflower	-/-	1B/2-1-2		Chaparral, lower montane coniferous forest
<i>Suaeda esteroa</i> Estuary suaeda	-/-	4/1-2-1		Coastal salt marshes
<i>Tetracoccus dioicus</i> Parry's tetracoccus	-/-	1B/3-2-2	MSCP	Chaparral, coastal sage scrub
<i>Thermopsis macrophylla</i> var. <i>semota</i> Velvety false-lupine	-/-	1B/2-2-3		Lower montane coniferous forest
<i>Trichostema micranthum</i> Small-flowered bluecurls	-/-	4/1-1-1		Lower coniferous forest; dry margins of wet areas
<i>Viguiera laciniata</i> San Diego County viguiera	-/-	4/1-2-1		Chaparral, coastal sage scrub
<i>Xylorhiza orcuttii</i> Orcutt's aster	-/-	1B/2-2-2		Sonoran desert scrub

NOTE: See following page for explanation of sensitivity codes.

SENSITIVITY CODES

FEDERAL CANDIDATES AND LISTED PLANTS

FE	=	Federally listed, endangered
FT	=	Federally listed, threatened
FPE	=	Federally proposed endangered
FPT	=	Federally proposed threatened

STATE LISTED PLANTS

CE	=	State listed, endangered
CR	=	State listed, rare
CT	=	State listed, threatened

CITY OF SAN DIEGO

NE	=	Narrow endemic
MSCP	=	MSCP covered species

CALIFORNIA NATIVE PLANT SOCIETY

LISTS

- 1A = Species presumed extinct.
- 1B = Species rare, threatened, or endangered in California and elsewhere. These species are eligible for state listing.
- 2 = Species rare, threatened, or endangered in California but which are more common elsewhere. These species are eligible for state listing.
- 3 = Species for which more information is needed. Distribution, endangerment, and/or taxonomic information is needed.
- 4 = A watch list of species of limited distribution. These species need to be monitored for changes in the status of their populations.

R-E-D CODES

R (Rarity)

- 1 = Rare, but found in sufficient numbers and distributed widely enough that the potential for extinction is low at this time.
- 2 = Occurrence confined to several populations or to one extended population.
- 3 = Occurrence limited to one or a few highly restricted populations, or present in such small numbers that it is seldom reported.

E (Endangerment)

- 1 = Not endangered
- 2 = Endangered in a portion of its range
- 3 = Endangered throughout its range

D (Distribution)

- 1 = More or less widespread outside California
- 2 = Rare outside California
- 3 = Endemic to California

APPENDIX C

SUPPLEMENTARY INFORMATION ON ALTERNATIVE CHARACTERISTICS

- C-1 Alternative Comparison of Highway Corridor Projects**
- C-2 Alternative Comparison of Freeway Connectors**
- C-3 Alternative Comparison of HOV Connectors**
- C-4 Alternative Comparison of Transit Improvements**

Table C-1
Alternative Comparison of Highway Corridor Projects

Freeway	From	To	Existing	Improvements	No Project	Revenue Constrained	Proposed Project	Highway Emphasis	Transit Emphasis
I-5/I-805	Mexico	SR 905	8F	10F				X	
I-5/I-805	Port of Entry		---	Inspection Facility		X	X	X	
I-5	SR 905	SR 54	8F	8F + 2HOV			X		
I-5	SR 905	SR 54	8F	10F				X	
I-5	SR 54	I-15	8F	8F + 2HOV			X		
I-5	SR 54	I-15	8F	12F				X	
I-5	I-15	I-8	8F	10F			X	X	
I-5	I-15	I-8	8F	8F + 2HOV					
I-5	I-15	I-8	8F	12F				X	
I-5	SR 54	I-8	8F	Operational		X			
I-5	I-8	I-805	8F	10F + 2HOV			X		
I-5	I-8	I-805	8F	12F				X	
I-5	Mission Bay Drive	SR 52	8F	9F	X	X	X	X	
I-5	I-805 Merge		10F	14F	X	X	X	X	X
I-5	Del Mar Hgts	Vandergrift	8F	8F + 4ML		X			
I-5	Del Mar Hgts	Leucadia Blvd	8F	10F+4HOV/ML			X		
I-5	Del Mar Hgts	Leucadia Blvd	8F	14F				X	
I-5	Del Mar Hgts	Palomar Airport Rd	8F	8F + 2TO					X
I-5	Leucadia Blvd	Vandergrift	8F	8F + 4HOV/ML			X		
I-5	Leucadia Blvd	Vandergrift	8F	12F				X	
I-5	Vandergrift	Orange County	8F	8F + 2HOV			X		
I-8	I-5	SR 125	8F	10F				X	
I-8	SR 125	SR 67	8F	8F + 2HOV			X		

Freeway	From	To	Existing	Improvements	No Project	Revenue Constrained	Proposed Project	Highway Emphasis	Transit Emphasis
I-8	SR 67	2nd St	6F	6F + 2HOV			X		
I-8	2nd St	Los Coches	4F	6F	X	X	X	X	X
I-8	2nd St	Los Coches	4F	4F + 2TO					X
I-8	2nd St	Greenfield Dr	5F	6F	X	X	X	X	X
I-8	Los Coches	Tavern Rd	4F	6F				X	
I-8	Los Coches	Tavern Rd	4F	4F + 2TO					X
I-8	Los Coches	Willows Rd	4F	6F				X	
SR 11	SR 905	Mexico	---	4F		X	X	X	
I-15	I-5	SR 94	6F	8F			X		
I-15	I-5	SR 94	6F	8F + 2TO					X
I-15	I-5	SR 94	6F	10F				X	
I-15	SR 94	SR 163	6F/8F	8F + 2HOV		X	X		
I-15	SR 94	SR 163	6F/8F	8F + 2TO					X
I-15	SR 94	SR 163	6F/8F	10F				X	
I-15	SR 163	SR 56	8F+2ML	8F + 4HOV/ML/MB		X	X	X	X
I-15	Miramar Way	Mira Mesa Blvd	8F	9F	X	X	X	X	X
I-15	SR 56	Center City Pkwy (S)	8F	8F + 4HOV/ML/MB	X	X	X	X	X
I-15	Center City Pkwy (S)	SR 78	8F	8F + 4HOV/ML		X	X		
I-15	Citracado Parkway	Valley Parkway	8F	9F	X	X	X	X	X
I-15	SR 78	Riverside County	8F	6F + 2HOV		X			
I-15	SR 78	Riverside County	8F	6F + 2TO					X
I-15	SR 78	Riverside County	8F	10F				X	
I-15	SR 78	Centre City Pkwy (N)	8F	8F + 2HOV			X		
SR 52	I-5	I-805	4F	6F			X	X	
SR 52	I-805	I-15	4F	6F + 2HOV		X	X		

Freeway	From	To	Existing	Improvements	No Project	Revenue Constrained	Proposed Project	Highway Emphasis	Transit Emphasis
SR 52	I-15	SR 125	4F	6F + 2HOV (reversible)XX		X	X		
SR 52	I-805	SR 125	4F	6F + 2TO				X	X
SR 52	SR 125	SR 67	---	4F	X	X	X	X	X
SR 52	SR 125	SR 67	---	6F + 2TO					X
SR 52	SR 125	SR 67	---	8F				X	
SR 54	I-5	I-805	6F	6F + 2HOV			X		
SR 54	I-5	I-805	6F	8F				X	
SR 54	I-805	SR 125	4F+ 2HOV	6F + 2HOV		X	X		
SR 54	I-805	SR 125	4F+ 2HOV	6F + 2TO					X
SR 54	I-805	SR 125	4F+ 2HOV	8F				X	
SR 54	SR 125	I-8	2C	4C				X	
SR 56	Carmel Country Rd	Camino Ruiz	---	4F	X	X	X	X	X
SR 56	Camino Ruiz	Black Mountain Rd	---	4F	X	X	X	X	X
SR 56	I-5	I-15	4F	6F + 2TO					X
SR 56	I-5	I-15	4F	8F				X	
SR 67	I-8	SR 52	6F	8F				X	
SR 67	SR 52	Mapleview St	4F	6F				X	
SR 67	Mapleview St	Dye Rd	2C	4C				X	
SR 67	Scripps Poway Pkwy	Dye Rd	2C	4C + 2TO					X
SR 75/SR 282	Glorietta Blvd	Alameda Blvd	6C	6C + 2TU		X	X	X	
SR 76	Melrose Dr	I-15	2C	4C			X		
SR 76	I-15	Valley Center Rd	2C	4C				X	
SR 78	I-5	I-15	6F	8F			X	X	
SR 78	I-5	I-15	6F	8F + 2HOV					

Freeway	From	To	Existing	Improvements	No Project	Revenue Constrained	Proposed Project	Highway Emphasis	Transit Emphasis
SR 94	I-5	I-805	8F	8F + 2HOV		X	X		
SR 94	I-5	I-805	8F	8F + 2TO					X
SR 94	I-5	I-805	8F	10F				X	
SR 94	I-805	SR 125	8F	8F + 2HOV			X		
SR 94	I-805	SR 125	8F	8F + 2TO					X
SR 94	I-805	SR 125	8F	10F			X		
SR 94	SR 125	Avocado Blvd	4F	6F			X		
SR 94	SR 125	Avocado Blvd	4F	6F + 2TO					X
SR 94	Avocado Blvd	Jamacha Rd	4C	4F			X		
SR 94	Avocado Blvd	Miller Ranch Rd	4C/2C	6C/4C				X	
SR 94	Jamacha Rd	Steele Cyn Rd	2C	4C			X		
SR 125	SR 905	San Miguel Rd	---	4T	X	X	X	X	X
SR 125	Telegraph Cyn Rd	San Miguel Rd	4T	6T		X			
SR 125	San Miguel Rd	SR 54	---	4F	X	X	X	X	X
SR 125	San Miguel Rd	SR 54	4F	6F		X			
SR 125	SR 905	San Miguel Rd	4T	8T			X	X	
SR 125	San Miguel Rd	SR 54	4F	8F			X	X	
SR 125	SR 54	SR 94	6F	6F + 2HOV	X	X	X	X	X
SR 125	SR 54	SR 94	6F	6F + 2TO					X
SR 125	SR 54	SR 94	6F	10F				X	
SR 125	Jamacha Rd	SR 94	---	6F	X	X	X	X	X
SR 125	SR 94	I-8	8F	8F + 2HOV			X		
SR 125	SR 94	I-8	8F	10F				X	
SR 125	Navajo Rd	Grossmont Dr	---	6F	X	X	X	X	X
SR 125	I-8	SR 52	6F	8F				X	

Freeway	From	To	Existing	Improvements	No Project	Revenue Constrained	Proposed Project	Highway Emphasis	Transit Emphasis
SR 125	SR 52/Mast Blvd	I-15 & Deer Springs Rd	---	4F				X	
SR 241	Orange County	I-5	---	4T		X	X	X	X
SR 241	Orange County	I-5	4T	4T + 2HOV		X	X	X	X
I-805	Mexico	SR 905	8F	10F				X	
I-805	SR 905	SR 54	8F	8F + 2HOV		X			
I-805	SR 905	SR 54	8F	8F + 2TO					X
I-805	SR 905	SR 54	8F	8F + 4ML			X		
I-805	SR 905	SR 54	8F	12F				X	
I-805	SR 54	I-8	8F	8F + 4ML		X	X		
I-805	SR 54	I-8	8F	8F + 2TO					X
I-805	SR 54	I-8	8F	12F				X	
I-805	I-8 Bridge Widening	Mission Vly Viaduct	8F	8F + 4ML		X	X		
I-805	I-8 Bridge Widening	Mission Vly Viaduct	8F	8F + 2TO					X
I-805	I-8 Bridge Widening	Mission Vly Viaduct	8F	12F				X	
I-805	I-8	I-5	8F	8F + 4ML/MB		X	X		
I-805	I-8	I-5	8F	8F + 2TO					X
I-805	I-8	I-5	8F	12F				X	
SR 905	I-805	Mexico	---	4F	X	X	X	X	X
SR 905	I-805	Heritage Rd	4F	6F			X		
SR 905	I-5	Mexico	4F	8F				X	

C = Conventional Highway Lanes

F = Freeway Lanes

HOV = High Occupancy Vehicle Lanes

ML = Managed Lanes

T = Toll Road

TO = Transit Only Lane

TU = Tunnel

Table C-2
Alternative Comparison of Freeway Connectors

Freeway	Intersecting Freeway	Movement	Baseline	Revenue Constrained	Mobility	Highway Emphasis	HOV Extreme	Transit Emphasis	Unconstrained
I-5	SR 94	North to East				X			X
I-5	I-8	East to North and South to West			X	X			X
I-5	SR 56	West to North and South to East		X	X	X	X		X
I-5	SR 78	Widen North to East	X	X	X	X	X	X	X
I-5	SR 78	West to South and South to East		X	X	X	X		X
I-15	SR 56	East to North	X	X	X	X	X	X	X
I-15	SR 56	North to West				X	X		X
SR 94	SR 125	West to North and South to East		X	X	X	X		X

Table C-3
Alternative Comparison of HOV Connectors

Freeway	Intersecting Freeway	Movement	No Project	Revenue Constrained	Proposed Project	Highway Emphasis	Transit Emphasis
I-5	I-805 Merge	North to North and South to South		X	X		
I-8	SR 125	West to North and North to East			X		
I-15	SR 94	East to North and South to West		X	X		
I-15	I-805	North to North and South to South			X		
I-15	SR 78	East to South and North to West			X		
I-805	SR 52	West to North and South to East			X		

Table C-4
Alternative Comparison of Transit Improvements

Route	Description	Service Area	Service Type	No Project	Revenue Constrained	Proposed Project	Highway Emphasis	Transit Emphasis
398	Increase in Coaster	NCTD	YELLOW		X	X	X	X
399	Increase in Oceanside to Escondido Rail	NCTD	RED		X	X	X*	X
470	Escondido to UTC via Mira Mesa Blvd	NCTD	YELLOW			X		X
471	Palomar Airport Road	NCTD	RED			X		X
472	Legoland to UTC via El Camino Real/I-5	NCTD	RED			X		X
473	Sycamore to Solana Beach via Legoland/Hwy 101	NCTD	RED					X
474	Oceanside to Vista via Mission	NCTD	RED					X
475	Oceanside to UTC via El Camino Real/I-5	NCTD	RED					X
476	Carlsbad to Vista via Vista Way	NCTD	RED					X
480	Vista to UTC via College/I-5	NCTD	YELLOW					X
510	Increase in Blue Line Trolley (Red Car)	MTDB	RED		X	X	X*	X
520	Increase in Orange Line Trolley	MTDB	RED			X	X	X
540	Blue Line Trolley (Yellow Car)	MTDB	YELLOW				X*	X
570	Mid-Coast	MTDB	RED		X	X	X	X
610	Escondido to Centre City/Airport via I-15/Hwy 94	MTDB	YELLOW		X	X	X	X
611	El Cajon Boulevard	MTDB	RED		X	X		X
612	Old Towne to Balboa Station via Mission Blvd	MTDB	RED		X	X		X
613	Centre City to Point Loma via Harbor Dr	MTDB	RED					X
614	Balboa Station to Spring Valley via Mission Gorge	MTDB	RED					X
615	Poway to UTC via Mira Mesa & Scripps Poway Pkwy	MTDB	RED					X
616	Pt. Loma to Mira Mesa via Black Mt & Linda Vista	MTDB	RED			X		X

Route	Description	Service Area	Service Type	No Project	Revenue Constrained	Proposed Project	Highway Emphasis	Transit Emphasis
617	Poway to Torrey Pines via Black Mt/Del Mar Heights	MTDB	RED					X
619	32nd Street to Sorrento Mesa via I-15/Clairemont Mesa	MTDB	RED			X		X
620	Ramona to UTC via Poway and Hwy 56	MTDB	YELLOW					X
621	Coronado to Sorrento Mesa via Hillcrest/Genesee	MTDB	RED		X	X		X
623	Mission SD to Grossmont via Navajo	MTDB	RED					X
624	University Ave	MTDB	RED					X
625	Imperial Beach to Otay Mesa via Hwy 905	MTDB	RED					X
626	National City to Iris Station via 3rd/4th	MTDB	RED					X
627	H Street Trolley to Eastlake via SW College	MTDB	RED			X		X
629	Old Town to Kearny Mesa via Clairemont Mesa	MTDB	RED					X
630	Old Town to Grossmont Center via El Cajon Blvd	MTDB	YELLOW					X
632	Balboa Station to UTC via La Jolla	MTDB	RED					X
634	UCSD/UTC Loop	MTDB	RED					X
660	El Cajon to UTC via Hwy 52	MTDB	YELLOW			X		X
670	El Cajon to San Ysidro via I-805/Hwy 125/Hwy 54	MTDB	YELLOW					X
680	Otay Mesa to Sorrento Mesa via I-15/I-805	MTDB	YELLOW			X		X
690	National City to Sorrento Mesa via via I-15/Hwy 52	MTDB	YELLOW					X
693	Alpine to El Cajon via I-8	MTDB	YELLOW					X
694	Centre City to Otay Mesa via Hwy 95/I-805/Tel Cyn	MTDB	RED		X	X		X

*Station improvements only

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